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themselves and all others similarly situated

**UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION**

THOMAS FLOWERS, an individual,
CHRISTOPHER L. NELSON, an
individual, on behalf of themselves and
all others similarly situated,

Plaintiffs,

v.

DOCTOR'S BEST, INC., a corporation,
Defendant.

Case No. 13-cv-8174

**SECOND AMENDED CLASS
ACTION COMPLAINT**

JURY TRIAL DEMANDED

Trial Date: None set

SECOND AMENDED CLASS ACTION COMPLAINT

Plaintiffs Thomas Flowers and Christopher L. Nelson (collectively,
"Plaintiffs"), by and through their attorneys, bring this class action on behalf of
themselves and similarly-situated others who purchased health supplements
containing glucosamine, chondroitin hyaluronic acid and methylsulfonylmethane

(“MSM”) manufactured and marketed by Doctor’s Best, Inc. (collectively, “Doctor’s Best” or “Defendant”), and state as follows:

INTRODUCTION AND NATURE OF ACTION

1. Doctor’s Best is a manufacturer and marketer of supplements for humans and animals.

2. Doctor’s Best sells its products nationally through various online and brick-and-mortar retailers. In addition to the substantial amount of the Supplements sold in California retail stores, online retailers ship significant quantities of its products to California residents who purchased those products on various websites.

3. Doctor’s Best markets, sells and distributes a line of joint health dietary supplements under its brand name (collectively referred to as the “Supplements”).¹ According to the labels on these products, the purported active ingredients are glucosamine sulfate, chondroitin sulfate, hyaluronic acid and MSM.

4. Doctor’s Best promotes its products claiming that the Supplements: (a) are “science-based nutrition”; (b) that “maintain[s] healthy joints and connective tissue”; and with respect to its Glucosamine Chondroitin MSM + Hyaluronic Acid product, that it (c) “maintains and lubricates healthy joints and connective tissue.”

5. Defendant’s “science-based” ploy represents a conscious decision by the Company to appeal to the purported indicia of scientific reliability in an effort to increase the Supplements’ sales. This appeal is fundamentally deceptive, however: no credible science backs Defendant’s claims.

6. Defendant selected this marketing approach for a very simple reason: it works. It is well-established that scientific evidence assumes a posture of “mythic infallibility” in the eyes of a layperson. *See, e.g., United States v. Addison*, 498 F.2d 741, 744 (D.C. Cir. 1974) (stating that scientific evidence may “assume a posture of

¹ The Supplements include (but are not necessarily limited to): 1) Glucosamine Chondroitin MSM 120C; 2) Glucosamine Chondroitin MSM 240C; and 3) Glucosamine Chondroitin MSM + Hyaluronic Acid.

mythic infallibility in the eyes of a jury of laymen”); *United States v. Amaral*, 488 F.2d 1148, 1152 (9th Cir. 1973) (noting the potential prejudicial effect arising from the “aura of special reliability and trustworthiness” of scientific testimony); Christopher B. Mueller & Laird C. Kirkpatrick, *Modern Evidence: Doctrine and Practice* § 7.8, at 992 (1995) (citing cases involving efforts to procure funds for expert testimony on eyewitness identification for the proposition that “(s)cientific proof may suggest unwarranted certainty to lay factfinders, especially if it comes dressed up in technical jargon, complicated mathematical or statistical analysis, or involves a magic machine (‘black box’) that may seem to promise more than it delivers”); John William Strong, *Language and Logic in Expert Testimony: Limiting Expert Testimony by Restrictions of Function, Reliability, and Form*, 71 Or. L. Rev. 349, 367 n.81 (1992) (“There is virtual unanimity among courts and commentators that evidence perceived by jurors to be ‘scientific’ in nature will have particularly persuasive effect.”).

7. While Doctor’s Best’s claims regarding the improved joint and connective tissue health and lubrication are directed at anyone seeking to alleviate joint pain or stiffness, it is particularly directed at older people and those suffering from arthritis.

8. According to the American College of Rheumatology, “[o]steoarthritis is a joint disease that most often affects middle-age to elderly people.”²

9. It is evident from Defendant’s print ads for glucosamine and/or chondroitin sulfate, most of which feature actors who appear to be over the age of 50, that it markets its products to middle age and elderly people or, in other words, those most likely to suffer from arthritis.

² See http://www.rheumatology.org/practice/clinical/patients/diseases_and_conditions/osteoarthritis.asp.

10. According to the research and testimony of Dr. Jeremiah Silbert (*see* Ex. 1), a renowned researcher, internist and Adjunct Professor of Medicine at Harvard Medical School, however, the oral ingestion of glucosamine and/or chondroitin sulfate cannot provide any beneficial effects because neither compound is carried in meaningful amounts to the site of the joint. In short, Dr. Silbert's research demonstrates conclusively that the compounds never "get there." As such, according to Dr. Silbert's research, the Supplements are not "science-based nutrition", they do not "maintain healthy joints and connective tissue", and they do not "lubricate" joints. *See, e.g.,* Ann. Rheum. Dis. 2006,65:222-226; Biochem. J. 2003, 376, 511-515; Arth. Rheum. 2004, 50, 3574-3579.

11. Multiple subsequent credible scientific studies support Dr. Silbert's conclusions that the Supplements are not efficacious for any purpose. Of these, most damning to Doctor's Best's science-based appeal is a large scale study sponsored and conducted by the National Institute of Health ("NIH") called the Glucosamine/chondroitin Arthritis Intervention Trial ("GAIT"), which concluded, in a report published in the New England Journal of Medicine, that "[glucosamine and chondroitin], alone or in combination, was not efficacious. . . ." Clegg, D., et al., Glucosamine, Chondroitin Sulfate, and the Two in Combination for Painful Knee Osteoarthritis, 354 *New England J. of Med.* 795, 806 (2006).³

12. In its advertising and promotion of the Supplements, Doctor's Best makes numerous references to scientific studies that, it claims, demonstrate the efficacy of the Supplements.

³ The GAIT Study was conducted by the National Center for Complementary and Alternative Medicine, which is, according to its website "is the Federal Government's lead agency for scientific research on the diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine."

13. It is notable that the very “studies” Doctor’s Best claims support the scientific validity of its marketing claims (but in fact do not) were conducted on *arthritis patients*, underscoring Defendant’s clear knowledge that its Supplements are used by arthritis patients for the treatment of arthritis. *See* Mansour, J., 2004, Lippincott Williams & Wilkins: Baltimore. p. 14; Kelly, G.S., *Altern Med Rev*, 1998. 3(1): p. 27-39; Lee, Y.H., et al., *Rheumatol Int*, 2010. 30(3): p. 357-63; Huskisson, E.C., *J Int Med Res*, 2008. 36(6): p. 1161-79; Vangsness, C.T., Jr., W. Spiker, and J. Erickson, *Arthroscopy*, 2009. 25(1): p. 86-94; Noack, W., et al., *Osteoarthritis and Cartilage*, 1994. 2: p. 51-59; Muller-Fassbender, H., et al., *Osteoarthritis Cartilage*, 1994. 2(1): p. 61-9; Herrero-Beaumont, G. et al., *Arthritis Rheum*, 2007. 56(2):p 555-67; Monfort, J., et al., *Ann Rheum Dis*, 2008. 67(6): p. 735-40; Kim, L.S., et al., *Osteoarthritis Cartilage*, 2006. 14(3): p. 286-94; Usha, P.R. and M.U. Naidu, *Randomised, Clin. Drug Investig*, 2004. 24(6): p. 353-63).⁴

14. As a result of Defendant’s deceptive representations, consumers – including Plaintiffs and members of the proposed Class – have purchased products that do not perform as advertised.

15. Plaintiffs bring this action on behalf of themselves and all other similarly situated consumers to halt the dissemination of this false and misleading advertising message, correct the false and misleading perception it has created in the minds of consumers, and obtain redress for those who have purchased the Supplements based on violations of California’s false advertising and unfair

⁴ While most of the clinical studies finding a lack of efficacy for glucosamine and/or chondroitin were performed on arthritic patients and in turn most concerned knee arthritis, experts in the field deem these clinical studies to be appropriate proxies for whether the ingredients are effective for other joints in the body and for both arthritic and non- arthritic users of these ingredients. Thus, the studies are used to demonstrate the efficacy (or, as the case may be, inefficacy) for both arthritic and non-arthritic patients alike.

competition laws and breach of express warranties. Plaintiffs seek injunctive and monetary relief for all consumers who purchased the Supplements.

JURISDICTION AND VENUE

16. This Court has original jurisdiction pursuant to 28 U.S.C. § 1332(d)(2). The matter in controversy, exclusive of interest and costs, exceeds the sum or value of \$5,000,000 and is a class action in which there are in excess of 100 class members and many members of the Class are citizens of a state different from Defendant.

17. This Court has jurisdiction because Plaintiff Thomas Flowers is a resident of California, and Plaintiff Christopher L. Nelson is a resident of Pennsylvania, and Defendant does business in California.

18. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391(a) and (b) because a substantial part of the events or omissions giving rise to Plaintiffs' claims occurred in this judicial district.

PARTIES

19. Plaintiff Thomas Flowers is a record producer and musician who resides in Goleta, California. For approximately the past 20 years, Plaintiff Flowers has suffered from arthritis-like symptoms, including pain and limited motion in his joints and most especially in his hands but also in his knees and ankles. Plaintiff Flowers reports that he has a family history of arthritis and believes that he also suffers from arthritis. Plaintiff Flowers experiences these symptoms most accurately when playing the guitar and practicing martial arts.

20. Plaintiff Flowers purchased Doctor's Best brand Supplements "every few months" from approximately May 2010 through October 2012. Plaintiff Flowers believes he purchased the Supplements at several stores in and around Goleta, including Vons and Lassens. He reports that he may have purchased the Supplements at other stores as well. Plaintiff Flowers reports that prior to each purchase of the Supplements, he read the representation on the bottle that that they

provided “science-based nutrition.” He reports that he believed based upon this representation that there was a credible scientific basis for Defendant’s claim and he in fact relied upon this claim. Similarly, Plaintiff Flowers further reports that prior to making each purchase of the Supplements, he read and directly relied upon the representation that it would “maintain healthy joints and connective tissue” in making his purchase decision.

21. Plaintiff Flowers also purchased Glucosamine Chondroitin MSM + Hyaluronic Acid on at least one occasion in 2012 at Vons in Goleta. In making this purchase decision, Plaintiff Flowers reports that he read and directly relied upon the representations that this product was “science based nutrition” that “maintain[s] and lubricates healthy joints and connective tissue.”

22. Plaintiff Flowers believes he paid approximately \$20-25 per 120 tablet bottle and \$40 per 240 tablet bottle for his purchases of Glucosamine Chondroitin MSM.

23. As someone suffering from arthritis-like symptoms arthritis, Plaintiff Flowers believed that Defendant marketed its products toward him. He reports that there is nothing on the Supplements’ packaging which indicates that it is not intended to be used by osteoarthritis patients, save a boilerplate and mandatory FDA disclosure which appears on every supplement sold in the United States. Based upon Defendant’s representations, Plaintiff Flowers believed that the Supplements would aid his symptoms.

24. Plaintiff Flowers used Doctor’s Best brand Supplements as directed and expected based on Defendant’s representations that his symptoms would not get worse. He reports that unfortunately the symptoms did get worse. As a result, Plaintiff Flowers suffered an injury in fact and lost the money associated with his purchase. If Plaintiff Flowers was aware that Doctor’s Best had misrepresented the benefits of the Supplements he would not have purchased Doctor’s Best brand Supplements.

25. Plaintiff Christopher L. Nelson is a graduate of Duke University Law School and a practicing attorney. He resides in Landenberg, Pennsylvania. For the past approximately 15 years, Plaintiff Nelson has suffered from arthritis-like symptoms. Plaintiff Nelson's illness manifests for him as tendonitis, "grinding" joint pain and stiffness. Plaintiff Nelson's ailment affects him on a daily basis.

26. Plaintiff Nelson purchased Doctor's Best brand Supplements on multiple occasions from approximately April 2010 through November 2012. Plaintiff Nelson purchased the products at CVS and Walgreens stores in and around Kennett Square, Pennsylvania and Newark, Delaware. Plaintiff Nelson reports that prior to each purchase of the Supplements, he read the representation on the bottle that that they provided "science-based nutrition." He reports that he believed based upon this representation that there was a credible scientific basis for Defendant's claim and he in fact relied upon this claim. Similarly, Plaintiff Nelson further reports that prior to making each purchase of the Supplements, he read the and directly relied upon the representation that it would "maintain healthy joints and connective tissue" in making his purchase decision.

27. In addition, at or around the time of Plaintiff Nelson's purchase of the Supplements, he visited the Doctor's Best website to review the purported scientific basis for its claims. Plaintiff Nelson reports that at that time he noted that many of the studies cited by Doctor's Best were conducted on arthritis patients. Accordingly, Plaintiff Nelson believed that the Supplements would be suitable for his arthritis-like symptoms.

28. Plaintiff Nelson also purchased Glucosamine Chondroitin MSM + Hyaluronic Acid on a few occasions in 2012 at CVS and Walgreens locations in and around Kennett Square and Newark. In making these purchase decisions, Plaintiff Nelson reports that he read and directly relied upon the representations that this product was "science based nutrition" that "maintain[s] and lubricates healthy joints and connective tissue." Plaintiff Nelson believes he paid approximately \$20 per 120

tablet bottle and \$40 per 240 table bottle for his purchases of Glucosamine Chondroitin MSM.

29. As one who suffers from arthritis-like symptoms, Plaintiff Nelson believed that Defendant marketed its products toward him. He reports that there is nothing on the Supplements' packaging which indicates that it is not intended to be used by arthritis patients, save a boilerplate and mandatory FDA disclosure which appears on every supplement sold in the United States. Based upon Defendant's representations, Plaintiff Nelson believed that the Supplements would aid his arthritis-like symptoms.

30. Plaintiff Nelson used Doctor's Best brand Supplements as directed and did not notice any improvement in his symptoms. As a result, Plaintiff Nelson suffered an injury in fact and lost the money associated with his purchase. If Plaintiff Nelson was aware that Doctor's Best had misrepresented the benefits of the Supplements he would not have purchased Doctor's Best brand Supplements.

31. Defendant Doctor's Best is a Delaware corporation. At all relevant times, Doctor's Best has advertised, marketed, provided, offered, distributed, and/or sold the Supplements throughout the United States including to individuals in California and Pennsylvania such as Plaintiffs and the Class.

ALLEGATIONS

The False and Misleading Marketing Claims

32. This lawsuit concerns the products marketed and sold by Doctor's Best including, but not limited to: (1) Glucosamine Chondroitin MSM 120C; (2) Glucosamine Chondroitin MSM 240C, and; (3) Glucosamine Chondroitin MSM + Hyaluronic Acid.⁵

33. According to Defendant's website, the Supplements work as follows:
 Glucosamine is a fundamental building block for
 proteoglycans and glycosaminoglycans. Glucosamine

⁵ Plaintiffs reserve the right to include other products upon completion of discovery.

sulfate (GS) helps to maintain joint health through its ability to both act as a component of and stimulate formation of cartilage glycosaminoglycans and the hyaluronic acid backbone essential for the formation of cartilage proteoglycans.

See http://www.drbrvitamins.com/products/Glucosamine_Chondroitin_MSM_240C.html (last accessed October 13, 2013).

34. As their product packaging demonstrates, Doctor's Best lures consumers with promises that the Supplements provide "Science-Based Nutrition" which will assist in "Maintin[ing] Healthy Joints & Connective Tissue" and, with respect to its Glucosamine Chondroitin MSM + Hyaluronic Acid product, will "maintain[] and lubricate[] healthy joints and connective tissue." Each of these claims are false, as the research of Dr. Jeremiah Silbert and myriad credible scientific studies confirm.



Declaration of Jeremiah E. Silbert, MD

35. Jeremiah E. Silbert, MD is an adjunct Professor of Medicine at Harvard Medical School, Brigham and Women's Hospital, Division of Rheumatology, Immunology and Allergy. Since 1989 he has been a full time physician/scientist

focusing on biochemical research. As an expert in biochemical science, Dr. Silbert has utilized glucosamine extensively in experimentation and contributed significantly to information regarding glucosamine's natural and experimental metabolism, as well as its measurement and utilization. In addition, he has worked with biosynthesis, cellular localization and chondroitin sulfate measurement throughout his career. (*see* Ex. 1)

36. Dr. Silbert's research demonstrates that ingestion of glucosamine and/or chondroitin cannot provide any effects on cartilage, since neither are presented in significant amounts to the site of the cartilage. Furthermore, research by Dr. Silbert and others on the formation of chondroitin sulfate and the role of glucosamine, has indicated that no addition of any small amounts of extra glucosamine and/or chondroitin sulfate to cartilage would have a positive effect on the cartilage. (*see* Ex. 1)

37. Dr. Silbert has thoroughly examined the ingredients, advertising, promotion and claims of Doctor's Best's glucosamine/chondroitin/hyaluronic acid products. (*see* Ex. 1)

38. As Dr. Silbert's research confirms, orally-ingested glucosamine and chondroitin simply cannot "get there" – it does not arrive in quantities significant enough to have any beneficial health impact whatsoever on the joint. *See, e.g.,* Ann. Rheum. Dis. 2006,65:222-226; Biochem. J. 2003, 376, 511-515; Arth. Rheum. 2004, 50, 3574-3579. (*see* Ex. 1)

39. As such, Dr. Silbert concludes that the Supplements are not "science-based nutrition", do not "maintain healthy joints and connective tissues" and do not "lubricate" joints. (*see* Ex. 1)

Multiple Clinical Studies Demonstrate That the Supplements Are Ineffective

40. The overwhelming weight of high quality, credible and reliable studies confirm Dr. Silbert's findings and demonstrate that glucosamine and chondroitin, alone or in combination, do not provide any joint health benefits. This has resulted

in the scientific community generally recognizing that glucosamine and chondroitin, alone or in combination, cannot repair, regenerate, rebuild, maintain, preserve, renew, or rejuvenate cartilage, or rebuild joints, or improve joint health. For example, in 2012, the American College of Rheumatology – the primary organization in America for physicians and others who treat osteoarthritis and other joint problems – recommended that physicians not use glucosamine or chondroitin for knee arthritis.

41. In 2004, a study by McAlindon et al., entitled *Effectiveness of Glucosamine for Symptoms of Knee Osteoarthritis: Results From an Internet-Based Randomized Double-Blind Controlled Trial*, 117(9) *Am. J. Med.* 649 (Nov. 2004), concluded that glucosamine was no more effective than a placebo in treating the symptoms of knee osteoarthritis.

42. Also as early as 2004, many studies confirmed that there is a significant “placebo” effect with respect to consumption of products represented to be effective in providing joint health benefits such as Defendants’ Products – 30% or more of persons who took placebos in these studies believed that they were experiencing joint health benefits when all they were taking was a placebo. In this regard, a 2004 study by Cibere et al., entitled *Randomized, Double Blind, Placebo-Controlled Glucosamine Discontinuation Trial in Knee Osteoarthritis*, 51(5) *Arthritis Care & Research* 738-745 (Oct. 15, 2004), studied users of glucosamine who had claimed to have experienced at least moderate improvement after starting glucosamine. These patients were divided into two groups – one that continued using glucosamine and one that was given a placebo. The study results reflected that there was no difference in either the primary or secondary outcomes for the glucosamine and the placebo groups. The authors concluded that the study provided no evidence of symptomatic benefit from continued use of glucosamine.

43. In February 2006, the authors of the 2006 GAIT Study rigorously evaluated the effectiveness of glucosamine and chondroitin, alone and in

combination, on osteoarthritis for six months. According to the report published in the New England Journal of Medicine in February 2006, the study's authors concluded that "the primary outcome measure did not show that [glucosamine and chondroitin], alone or in combination, was efficacious" Clegg, D., et al., *Glucosamine, Chondroitin Sulfate, and the Two in Combination for Painful Knee Osteoarthritis*, 354 New England J. of Med. 795, 806 (2006).⁶

44. Subsequent GAIT studies in 2008 and 2010 reported that glucosamine and chondroitin did not rebuild cartilage⁷ and were otherwise ineffective – even in patients with moderate to severe knee pain for which the 2006 GAIT study's reported results were inconclusive. See Sawitzke, A.D., et al., *The Effect of Glucosamine and/or Chondroitin Sulfate on the Progression of Knee Osteoarthritis: A GAIT Report*, 58(10) J. Arthritis Rheum. 3183-91 (Oct. 2008); Sawitzke, A.D., *Clinical Efficacy and Safety Over Two Years Use of Glucosamine, Chondroitin Sulfate, their Combination, Celecoxib or Placebo Taken to Treat Osteoarthritis of the Knee: 2-Year Results From GAIT*, 69(8) Ann. Rheum. Dis. 1459-1464 (August 2010).

45. The GAIT studies, while definitive on their own, are consistent with the reported results of prior and subsequent studies. For example, a study by Rozendaal, et al., entitled *Effect of Glucosamine Sulfate and Hip Osteoarthritis: A Randomized Trial*, 148(4) Annals of Internal Medicine, 268-77 (2008), assessed the effectiveness of glucosamine on the symptoms and structural progression of hip

⁶ The 2006 GAIT Study was conducted by the National Center for Complementary and Alternative Medicine and the National Institute of Arthritis and Musculoskeletal and Skin Diseases, institutes belonging to the National Institutes of Health.

⁷ To a similar effect, a study by Kwok, et al., entitled *The Joints on Glucosamine (JOG) Study: A Randomized, Double-Blind, Placebo-Controlled Trial to Assess the Structural Benefit of Glucosamine in Knee Osteoarthritis Based On 3T MRI*, 60 Arthritis Rheum 725 (2009), concluded that glucosamine was not effective in preventing the worsening of cartilage damage.

osteoarthritis during two years of treatment, and concluded that glucosamine was no better than the placebo in reducing symptoms and progression of hip osteoarthritis.

46. A 2010 meta-analysis by Wandel, et al., entitled *Effects of Glucosamine, Chondroitin, or Placebo in Patients With Osteoarthritis of Hip or Knee: Network Meta-Analysis*, BMJ 341:c4675 (2010), examined prior studies involving glucosamine and chondroitin, alone or in combination, and whether they relieved the symptoms or progression of arthritis of the knee or hip. The study's authors reported that glucosamine and chondroitin, alone or in combination, did not reduce joint pain or have an impact on the narrowing of joint space compared with a placebo. *Id.* at 8. The authors went as far to say, "[w]e believe it unlikely that future trials will show a clinically relevant benefit of any of the evaluated preparations." *Id.*

47. Another 2010 study concluded that there was no difference between placebo and glucosamine for the treatment of low back pain and lumbar osteoarthritis and that neither glucosamine nor a placebo was effective in reducing pain-related disability. Wilkens, et al., *Effect of Glucosamine on Pain-Related Disability in Patients With Chronic Low Back Pain and Degenerative Lumbar Osteoarthritis*, 304(1) JAMA 45-52 (July 7, 2010).

48. In 2011, a summary article reviewed the clinical study history of glucosamine and chondroitin and concluded that "[t]he cost-effectiveness of these dietary supplements alone or in combination in the treatment of OA has not been demonstrated in North America." Miller, K. and Clegg, D., *Glucosamine and Chondroitin Sulfate*, Rheum. Dis. Clin. N. Am. 37, 103-118 (2011).

49. Most recently, in a 2013 study published in the journal Arthritis and Rheumatology, the authors studied the effect of glucosamine hydrochloride on a group of 201 adults for 24 weeks. Roughly half of the study subjects, 98, were given daily doses of glucosamine hydrochloride in a lemonade drink, and the other half, 103, were given drinks without the supplement. The test subjects were given

MRIs at the start of the trial and at the end and also reported on their knee pain and provided urine samples. The authors concluded that the MRI images, pain assessments and urinalysis provided no evidence that glucosamine was more effective than the placebo in improving joint health. Kwoh, et al., *The Joints on Glucosamine (JOG) Study: The Effect of Oral Glucosamine on Joint Structure, a Randomized Trial*, Accepted Article, doi:10.1002/art. 38314.

50. Scientific studies have also shown that the other ingredients in the Supplements are similarly ineffective. See, e.g., S. Brien, et. al., Systematic Review Of The Nutritional Supplements (DMSO) And Methylsulfonylmethane (MSM) In The Treatment Of Osteoarthritis, 16 *Osteoarthritis and Cartilage*, 1277 (Nov. 2008); Usha PR and Naidu MU, Randomised, Double-Blind, Parallel, Placebo-Controlled Study of Oral Glucosamine, Methylsulfonylmethane and their Combination in Osteoarthritis, 24 *Clinical Drug Investigation* 353-63 (2004); see also Biegert C et al., Efficacy and Safety of Willow Bark Extract in the Treatment of Osteoarthritis and Rheumatoid Arthritis: Results of 2 Randomized Double-Blind Controlled Trials, *Journal of Rheumatology* 31.11 (2004): 2121-30 (no efficacy for willow bark as compared with placebo and willow bark less effective than low dosages of non-steroidal anti-inflammatory); see also Abdel-Tawb, M., et al., Boswellia Serrata: An Overall Assessment Of In Vitro, Preclinical, Pharmacokinetic And Clinical Data, 50 *Clin Pharmacokinet.* 349-69 (2011).

51. Defendant's Glucosamine Chondroitin MSM + Hyaluronic Acid also contain a small amount of hyaluronic acid. Oral ingestion of hyaluronic acid does not have any efficacy in relieving joint pain and otherwise does not support improved joint health because hyaluronic acid is quickly degraded during digestion into its constituents – two common sugars found in a normal diet. Thus, the inclusion of hyaluronic acid in any products does not provide any joint health benefits.

52. As such, Doctor's Best's representations about the efficacy of the

ingredients in the Supplements are totally contradicted by all credible scientific evidence.

Doctor's Best Harms Consumers By Continuing To Market

And Sell the Supplements

53. Undeterred by the weight of scientific evidence demonstrating that the ingredients in the Supplements are wholly ineffective, Doctor's Best conveyed and continues to convey one uniform message: the Supplements provide "science-based nutrition" that will "maintain[] and lubricate[] healthy joints and connective tissue."

54. As the manufacturer and/or distributor of the Supplements, Doctor's Best possesses specialized knowledge regarding the efficacy of the ingredients contained in its Products and, moreover, is in a superior position to, and has, learned of the lack of efficacy for all of the key ingredients in the Supplements.

55. Specifically, Doctor's Best knew, but failed to disclose, that the Supplements do not provide the health benefits represented and that well-conducted, clinical studies have found the ingredients in the Supplements to be ineffective in providing the benefits represented by Doctor's Best.

56. Plaintiffs and Class members have been and will continue to be deceived or misled by Defendant's deceptive representations. Plaintiffs purchased and consumed the Supplements during the Class period and in doing so, read and considered the advertising and marketing by Doctor's Best and based their decisions to purchase the Products on the representations on the packaging and on Defendant's website. Doctor's Best's representations and omissions were a material factor in influencing Plaintiffs' decision to purchase and consume the product he purchased.

57. Other than obtaining the benefits that the Supplements promise but do not deliver, there is no other reason for Plaintiffs and the Class to have purchased the Products as the Products are not represented to provide any other benefits and Plaintiffs and the Class would not have purchased the Products had they known

Doctor's Best's joint health benefit statements were false and misleading and that clinical cause and effect studies have found the ingredients to be ineffective for the represented joint health benefits.

58. As a result, Plaintiffs and the Class members have been injured in fact in their purchases of the Supplements in that they were deceived into purchasing Products that do not perform as advertised.

59. Doctor's Best, by contrast, reaped enormous profit from its false marketing and sale of the Supplements.

CLASS DEFINITION AND ALLEGATIONS

60. Plaintiffs bring this action on behalf of themselves and all other similarly situated persons pursuant to Rule 23(a), (b)(2), and (b)(3) of the Federal Rules of Civil Procedure and seeks certification of the following Class:

All consumers who, within the applicable statute of limitations period, purchased the Supplements.

Excluded from the Class are Doctor's Best, its parents, subsidiaries, affiliates, officers and directors, and those who purchased the Supplements for resale.

61. The members of the Class are so numerous that joinder of all members of the Class is impracticable. Plaintiffs are informed and believe that the proposed Class contains thousands of purchasers of the Supplements who have been damaged by Doctor's Best's conduct as alleged herein. The precise number of Class members is unknown to Plaintiffs.

62. This action involves common questions of law and fact, which predominate over any questions affecting individual Class members. These common legal and factual questions include, but are not limited to, the following:

- (1) whether the claims discussed above are true, or are misleading, or objectively reasonably likely to deceive;
- (2) whether Doctor's Best's alleged conduct violates public policy;
- (3) whether the alleged conduct constitutes violations of the laws asserted;

- (4) whether Doctor's Best engaged in false or misleading advertising;
- (5) whether Plaintiffs and Class members have sustained monetary loss and the proper measure of that loss; and
- (6) whether Plaintiffs and Class members are entitled to other appropriate remedies, including corrective advertising and injunctive relief.

63. Plaintiffs' claims are typical of the claims of the members of the Class because, inter alia, all Class members were injured through the uniform misconduct described above having been exposed to Doctor's Best's false representations regarding the efficacy of the Supplements. Plaintiffs are advancing the same claims and legal theories on behalf of himself and all members of the Class.

64. Plaintiffs will fairly and adequately protect the interests of the members of the Class, have retained counsel experienced in complex consumer class action litigation, and intend to prosecute this action vigorously. Plaintiffs have no adverse or antagonistic interests to those of the Class.

65. A class action is superior to all other available means for the fair and efficient adjudication of this controversy. The damages or other financial detriment suffered by individual Class members is relatively small compared to the burden and expense that would be entailed by individual litigation of their claims against Doctor's Best. It would thus be virtually impossible for the Class, on an individual basis, to obtain effective redress for the wrongs done to them. Individualized litigation would create the danger of inconsistent or contradictory judgments arising from the same set of facts and would also increase the delay and expense to all parties and the courts. By contrast, the class action device provides the benefits of adjudication of these issues in a single proceeding, ensures economies of scale and comprehensive supervision by a single court, and presents no unusual management difficulties under the circumstances here.

66. Plaintiffs seek preliminary and permanent injunctive and equitable relief on behalf of the entire Class, preventing Doctor's Best from further engaging

in the acts described and requiring Doctor's Best to provide full restitution to Plaintiffs and Class members.

67. Unless a Class is certified, Doctor's Best will retain monies received as a result of its conduct that were taken from Plaintiffs and Class members. Unless a Class-wide injunction is issued, Doctor's Best will continue to commit the violations alleged, and the members of the Class and the general public will continue to be deceived.

68. Doctor's Best has acted and refused to act on grounds generally applicable to the Class, making appropriate final injunctive relief with respect to the Class as a whole.

FIRST CAUSE OF ACTION

(California False Advertising Law – Cal. Bus. & Prof. Code § 17500, et seq.)

69. Plaintiffs incorporate by reference and reassert all previous paragraphs.

70. Defendant engaged in unlawful conduct under California Business & Professions Code § 17500, et seq., by marketing the Supplements in a manner suggesting that there was a scientific basis upon which its claims regarding efficacy were based when, in fact, there was no scientific basis for any of Defendant's claims. Plaintiffs and the Class reasonably relied upon Defendant's representations and/or omissions made in violation of California Business & Professions Code § 17500, et seq.

71. As a direct and proximate result of Defendant's violations, Plaintiffs and the Class would not have otherwise purchased the Supplements and, therefore, suffered injury in fact and lost money.

72. Plaintiffs are informed and believes, and on that basis alleges, that as a further direct and proximate result of the marketing described above, Defendant has received from members of the general public, including the Class, money Defendant obtained through its violation of California Business & Professions Code § 17500, et seq., which Defendant continues to hold for its sole benefit.

73. Accordingly, Plaintiffs, on behalf of themselves and all others similarly situated, seek equitable relief in the form of an order requiring Defendant to refund to Plaintiffs and the Class members all monies they paid for the Supplements and, in addition, an order requiring Defendant to both inform the consuming public that there is no scientific basis for its claims regarding the efficacy of the Supplements.

SECOND CAUSE OF ACTION

(California Unfair Competition Law – Cal. Bus. & Prof. Code § 17200, et seq.)

74. Plaintiffs incorporate by reference and reassert all previous paragraphs.

75. Defendant engaged in unlawful conduct under California Business & Professions Code § 17200, et seq., by marketing the Supplements in a manner suggesting that there was a scientific basis upon which its claims regarding efficacy were based when, in fact, there was no scientific basis for any of Defendant's claims

76. Defendant's conduct is unlawful in that it violates the False Advertising Law, California Business & Professions Code § 17500, et seq.

77. Defendant's conduct is unfair in that it offends established public policy or is immoral, unethical, oppressive, unscrupulous, unconscionable or substantially injurious to Plaintiffs and the Class members. The harm to Plaintiffs and the Class members arising from Defendant's conduct outweighs any legitimate benefit Defendant has derived from the conduct.

78. Defendant's misrepresentations and omissions are likely to mislead a reasonable consumer.

79. Plaintiffs relied on Defendant's misrepresentations and omissions.

80. As a direct and proximate result of Defendant's violations, Plaintiffs would not have otherwise purchased the Supplements and, therefore, suffered injury in fact and lost money.

81. Plaintiffs, on behalf of themselves and the Class members, seek restitution of monies they paid for the Supplements. Additionally, Plaintiffs seek equitable and injunctive relief on behalf of themselves and the Class members

pursuant to Cal. Business & Professions Code § 17203.

THIRD CAUSE OF ACTION

**(Violation of California Consumer Legal Remedies Act,
California Civil Code § 1750, et seq.)**

82. Plaintiffs incorporate by reference and reassert all previous paragraphs.

83. Plaintiffs bring this cause of action on behalf of themselves and on behalf of all members of the Class.

84. Defendant is a “person” as defined by California Civil Code § 1761(c).

85. Plaintiffs and members of the Class are “consumers” within the meaning of California Civil Code § 1761(d).

86. Plaintiffs have complied with the notice provisions of the California Legal Remedies Action (“CLRA”) and are therefore entitled to seek damages. Defendant failed to provide appropriate relief for its violations of the CLRA. Therefore, Plaintiffs now seek monetary, compensatory and punitive damages, in addition to the injunctive and equitable relief they previously sought.

87. Defendant’s conduct with respect to the promotion and marketing of its glucosamine and chondroitin product and affirmatively misrepresenting the joint health benefits of the supplements, Doctor’s Best’s failure to disclose facts regarding this and other similar studies also constitutes deception by omission or concealment. As a result, Doctor’s Best’s joint health benefit representations and omissions are false, misleading and reasonably likely to deceive the public in violation of California Civil Code §§ 1770(a)(5) and 1770(a)(7).

88. Defendant’s unfair and deceptive acts occurred repeatedly and were capable of deceiving a substantial portion of the purchasing public.

89. Defendant’s misrepresentations and omissions are material and likely to mislead a reasonable consumer.

90. Plaintiffs relied on Defendant’s misrepresentations and omissions.

91. As a direct and proximate result of Defendant’s unfair or deceptive acts

or practices, Plaintiffs and members of the Class have suffered and will continue to suffer actual damages.

92. Plaintiffs and members of the Class are entitled to equitable relief. Plaintiffs seek an order requiring Defendant to: (a) pay damages according to proof; (b) immediately cease to conduct the alleged herein; (c) make full restitution of all monies wrongfully obtained; and (d) disgorge all ill-gotten venues and/or profits.

PRAYER FOR RELIEF

Wherefore, Plaintiffs pray for a judgment:

1. Certifying the Class as requested herein;
2. Awarding Plaintiffs and the proposed Class members damages;
3. Awarding restitution and disgorgement of Doctor's Best's revenues to Plaintiffs and the proposed Class members;
4. Awarding injunctive relief as permitted by law or equity, including enjoining;
 - a. Doctor's Best from continuing the unlawful practices as set forth herein, and directing Doctor's Best to identify, with Court supervision, victims of its conduct and pay them all money it is required to pay;
 - b. Ordering Doctor's Best to engage in a corrective advertising campaign;
5. Awarding statutory and punitive damages, as appropriate;
6. Awarding attorneys' fees and costs; and
7. Providing such further relief as may be just and proper.

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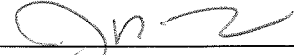
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DATED: July 3, 2014.

Respectfully submitted,

By: 

Jonathan D. Miller
Jennifer M. Miller
**NYE, PEABODY, STIRLING, HALE, &
MILLER, LLP**

By: _____/s/ _____

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Proposed Lead Counsel

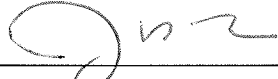
Attorneys for Plaintiffs THOMAS FLOWERS
and CHRISTOPHER L. NELSON, on behalf
of themselves and all others similarly
situated.

DEMAND FOR JURY TRIAL

Plaintiffs hereby demand a trial of their claims by jury to the extent authorized by law.

DATED: July 3, 2014.

Respectfully submitted,

By: 

Jonathan D. Miller
Jennifer M. Miller
**NYE, PEABODY, STIRLING, HALE, &
MILLER, LLP**

By: _____/s/ _____

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of themselves and all others similarly
situated.

Exhibit 1

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Proposed Lead Counsel

Attorneys for Plaintiffs THOMAS FLOWERS and
CHRISTOPHER L. NELSON, on behalf of
themselves and all others similarly situated

**UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA
WESTERN DIVISION**

THOMAS FLOWERS, an individual,
CHRISTOPHER L. NELSON, an
individual, on behalf of themselves and
all others similarly situated,

Plaintiffs,

v.

DOCTOR'S BEST, INC., a corporation,
Defendant.

Case No. 13-cv-8174

**DECLARATION OF JEREMIAH
E. SILBERT IN SUPPORT OF
CLASS ACTION COMPLAINT**

Trial Date: None set

1 I, JEREMIAH E. SILBERT, MD, declare:

2 **I. INTRODUCTION**

3 1. I am a medical doctor Board Certified in Internal Medicine. I have
4 personal knowledge of all relevant facts set forth in this declaration and, as this
5 declaration reflects, am competent to render the opinions set forth herein.

6 2. Over the course of my career I have regularly engaged in the practice of
7 medicine and conducted biochemical research. In this case, I have been asked by
8 Proposed Lead Class Counsel for the Plaintiffs to review the facts, advertisements,
9 and allegations on the Second Amended Complaint. I have also been asked to
10 render opinions on the efficacy of glucosamine/chondroitin/MSM/hyaluronic acid
11 products, and, in particular, the Doctor's Best products at issue as it relates to the
12 claims in this action. My initial opinions in this matter are set forth in this
13 declaration. As formal discovery and expert disclosures have yet to proceed, I
14 reserve my right to expand or modify my opinions accordingly.

15 **II. BACKGROUND AND QUALIFICATIONS**

16 3. If I am called as an expert in this matter, I expect to and will testify
17 regarding my background, qualifications and experience relevant to the issues in this
18 action. For the whole of my research career I have worked with biosynthesis,
19 cellular localization and measurement of chondroitin sulfate (as well as other
20 glycosaminoglycans). In this work I have utilized glucosamine extensively for
21 experimentation and contributed significantly to information regarding
22 glucosamine's natural and experimental metabolism, as well as its measurement and
23 utilization.

24 4. In 1989, I began conducting research full time in a VA laboratory. As
25 a VA physician/scientist I was appointed as an adjunct Professor of Medicine at
26 Harvard Medical School, Brigham and Women's Hospital, Division of
27 Rheumatology, Immunology, Allergy. A true and correct copy of my Curriculum

Vitae and Publications are attached hereto as Exhibits A and B, respectively.

III. MATERIALS REVIEWED

5. In forming the opinions set forth in this declaration I have considered and relied on my education, background, experience, and prior presentations and publications. I also reviewed and considered the Doctor's Best advertisements at issue, as well as the other documents or reference materials cited or listed in this declaration.

IV. RELEVANT FACTS AND OPINIONS

6. I am well aware and have personal knowledge of the advertising, promotion and claims of Doctor's Best, Inc.'s ("Doctor's Best") glucosamine/chondroitin products. Doctor's Best's claims regarding its products include:

"Science-Based Nutrition"

"Maintains Healthy Joints & Connective Tissues"

"Maintains and Lubricates Healthy Joints & Connective Tissues"

7. Extensive clinical joint health research has been conducted over the past several years to examine the effects of ingestion of glucosamine, chondroitin or a combination of the two. The main substances in cartilage are collagen and chondroitin sulfate attached to specific proteins. Inside the joints, cartilage undergoes a constant process of breakdown and repair. However, to be properly repaired, the building blocks of cartilage must be present and available. Treatment with glucosamine/chondroitin joint supplements is based on the theory that oral consumption of glucosamine and chondroitin may increase the rate of repair and formation of new cartilage by providing more of these necessary building blocks. They also theoretically, in turn would help to "lubricate" the joints and help maintain connective tissue.

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8. However, oral consumption of glucosamine and chondroitin has not been shown to alter the availability of these cartilage building blocks inside an arthritic joint. Thus, in my opinion, the above claims of Doctor's Best are false and deceptive. My reasoning is informed by good and accepted scientific evidence and more specifically my own research.

9. My own research has demonstrated that ingestion of glucosamine and/or chondroitin cannot provide any effects on cartilage, since neither are presented in significant amounts to the site of the cartilage. Furthermore, research (by me and others) on the formation of chondroitin sulfate and the role of glucosamine, has indicated that no addition of any small amounts of extra glucosamine and/or chondroitin sulfate to cartilage would have an effect on the cartilage. *See, e.g., Ann. Rheum. Dis.* 2006, 65:222-226; *Biochem. J.* 2003, 376, 511-515; *Arth. Rheum.* 2004, 50, 3574-3579.

10. Multiple studies following my research have shown that the clinical efficacy of the consumption of these compounds was illusory. As indicated in the studies described below, any positive results were attributable to the placebo effect rather than any clinical benefit derived from the consumption of the compounds themselves.

11. In 2006, the first GAIT study concluded that "[t]he analysis of the primary outcome measure did not show that either supplement, alone or in combination, was efficacious." 2006 GAIT Study at 806. Subsequent GAIT studies in 2008 and 2010 reported that glucosamine and chondroitin did not rebuild cartilage and were otherwise ineffective – even in patients with moderate to severe knee pain for which the 2006 GAIT study reported results were inconclusive. *See* Sawitzke, A.D., et al., the Effect of Glucosamine and/or Chondroitin Sulfate on the Progression of Knee Osteoarthritis: A GAIT Report, 58(10) *J. Arthritis Rheum.* 3183–91 (Oct. 2008); Sawitzke, A.D., Clinical Efficacy And Safety Of

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1 Glucosamine, Chondroitin Sulphate, Their Combination, Celecoxib Or Placebo
2 Taken To Treat Osteoarthritis Of The Knee: 2-Year Results From GAIT, 69(8) *Ann*
3 *Rhem. Dis.* 1459-64 (Aug. 2010).

4 12. In 2008, a study concluded that glucosamine was no better than a
5 placebo in reducing either the symptoms or progression of hip osteoarthritis.
6 Rozendaal et al., Effect of Glucosamine Sulfate on Hip Osteoarthritis, 148 *Ann. of*
7 *Intern. Med.* 268-77 (2008).

8 13. A 2010 meta-analysis examined prior studies involving glucosamine
9 and chondroitin, alone or in combination, and reported that the collection of studies
10 supported a conclusion that those compounds neither reduced joint pain nor had an
11 impact on the narrowing of joint space. Wandel et al., Effects of Glucosamine,
12 Chondroitin, Or Placebo In Patients With Osteoarthritis Of Hip Or Knee: Network
13 Meta-Analysis, *BMJ* 341:c4675 (2010).

14 14. Another 2010 study concluded that there was no difference between
15 placebo and glucosamine for the treatment of low back pain and lumbar
16 osteoarthritis and that there was no data recommending the use of glucosamine.
17 Wilkens et al., Effect of Glucosamine on Pain-Related Disability in Patients With
18 Chronic Low Back Pain and Degenerative Lumbar Osteoarthritis, 304(1) *JAMA* 45-
19 52 (July 7, 2010).

20 15. In 2011, a summary article reviewed the available literature and
21 concluded that "[t]he cost-effectiveness of these dietary supplements alone or in
22 combination in the treatment of OA has not been demonstrated in North America."
23 Miller, K. and Clegg, D., Glucosamine and Chondroitin Sulfate, *Rheum. Dis. Clin.*
24 *N. Am.* 37 (2011) 103-118.

25 16. Most recently, a meta-analysis synthesized all available studies
26 evaluating the efficacy of glucosamine for treating osteoarthritis and concluded that
27 glucosamine showed no pain reduction benefits for osteoarthritis. Wu D. et al.,

1 Efficacies of different preparations of glucosamine for the treatment of
 2 osteoarthritis: a meta-analysis of randomised, double-blind, placebo-controlled
 3 trials, 67(6) *Int. J. Clin. Pract.* 585-94 (June 2013).

4 17. Nor has any credible scientific study concluded that hyaluronic acid,
 5 alone or in combination with glucosamine and/or chondroitin, provides any benefit
 6 whatsoever. It does not "help to maintain healthy joints & connective tissue," or
 7 "lubricate joints" or provide any "science-based nutrition."

8 18. It is my opinion based on my own research and the clinical studies cited
 9 above as well as good and accepted scientific principles that there is no credible
 10 scientific evidence to support the claim that Doctor's Best's
 11 glucosamine/chondroitin/MSM/hyaluronic acid products "maintain[] healthy joints
 12 & connective tissue" and "maintain[] and lubricates healthy joints & connective
 13 tissue." It is also my opinion that Doctor's Best's
 14 glucosamine/chondroitin/hyaluronic acid products do not provide "science-based
 15 nutrition." It is also my opinion that no reasonable scientist or physician could
 16 conclude that there is any basis for Defendant's claims.

17 19. All of my opinions stated in this report are beyond a reasonable degree
 18 of biochemical and medical certainty.

19 I declare under penalty of perjury pursuant to the laws of the United States,
 20 that the foregoing is true and correct.

21 Executed this 3 day of July, 2014 in Brookline,
 22 Massachusetts.


23
 24
 25 
 26 Jeremiah E. Silbert, MD
 27
 28

Exhibit A

CURRICULUM VITAE

Jeremiah E. Silbert

Born: September 20, 1931, Cleveland Heights, Ohio

EDUCATION

- 1953 *A.B.* Harvard College, Cambridge, Massachusetts
- 1957 *M.D.* Harvard Medical School, Boston, MA
- 1957-58 *Intern in Medicine*, Barnes Hospital, St. Louis, Missouri
- 1958-59 *Assistant Resident in Medicine*, Barnes Hospital, St. Louis, Missouri
- 1959-61 *Postdoctoral Research Fellow*, Department of Biochemistry, Washington University School of Medicine, St. Louis, Missouri
- 1961-64 *Postdoctoral Clinical and Research Fellow in Medicine*, Lovett Memorial Unit for Crippling Diseases, Massachusetts General Hospital, Boston, MA

EXPERIENCE

- 1964-67 *Clinical Investigator*, Medical Service, Veterans Administration Hospital, Boston, MA
- 1964-68 *Instructor in Medicine*, Tufts University School of Medicine, Boston, MA
- 1965-66 *Visiting Scientist*, Department of Biophysics, Weizmann Institute of Science, Rehovot, Israel
- 1967-75 *Chief, Connective Tissue Research, Chief, Dental Research*, Veterans Administration Hospital, Boston, Massachusetts
- 1968-69 *Chief, Rheumatology*, Veterans Administration Hospital, Boston, MA
- 1968-75 *Assistant Professor in Medicine*, Tufts University School of Medicine, Boston, MA
- 1969-74 *Staff Rheumatologist*, Veterans Administration Hospital, Boston, MA
- 1969-75 *Medical Investigator*, Veterans Administration Hospital, Boston, MA
- 1971-75 *Assistant Professor of Biochemistry/Pharmacology*, Tufts University School of Medicine and Dental Medicine, Boston, MA
- 1972-75 *Lecturer in Medicine*, Boston University School of Medicine, Boston, MA

1975-81 *Associate Professor in Medicine*, Associate Professor of
Biochemistry/Pharmacology, Tufts University School of Medicine and
Dental Medicine, Boston MA

1976-77 *Acting Associate Chief of Staff for Education*, Veterans Administration
Outpatient Clinic, Boston, MA

1976-80 *Acting Co-Director, Acting Director*, Geriatric Research Education
Clinical Center, Veterans Administration Outpatient Clinic, Boston, MA

1976-83 *Director, Normative Aging Study*, Veterans Administration Outpatient
Clinic, Boston, MA, Acting Director, 1984.

1976- 93 *Responsible Investigator*, Connective Tissue Research Laboratory,
Veterans Administration Outpatient Clinic, Boston, MA

1977-81 *Lecturer in Medicine*, Harvard Medical School, Boston, MA

1978-87 *Associate Physician*, Beth Israel Hospital, Boston, Massachusetts

1981-present *Professor of Medicine*, Harvard Medical School, Brigham and Women's
Hospital, Department of Medicine, Division of Rheumatology,
Immunology and Allergy, Boston, MA

1981-93 *Physician*, Brigham and Women's Hospital, Boston, MA

1984-89 *Medical Investigator*, Veterans Administration Outpatient Clinic, Boston,
MA

1990-93 *Senior Medical Investigator*, Veterans Administration Outpatient Clinic,
Boston, MA

1993-99 *Senior Medical Investigator*, Responsible Investigator, Connective Tissue
Research Laboratory, Edith Nourse Rogers Memorial Veterans Hospital,
Bedford, MA

1999-2007 *Senior Medical Investigator Emeritus*, Responsible Investigator,
Connective Tissue Research Laboratory, Edith Nourse Rogers Memorial
Veterans Hospital, Bedford, MA

2007-present *VA Senior Medical Investigator Emeritus and Professor of Medicine*,
Harvard Medical School

MEMBERSHIPS AND PROFESSIONAL AFFILIATIONS

1960	American Rheumatism Association
1962	American Federation for Clinical Research
1966	American Society for Biochemistry and Molecular Biology Editorial Board, Journal of Biological Chemistry, 1982-7
1968	Society for Glycobiology (formerly Society for Complex Carbohydrates) <i>Executive Committee</i> , 1979-81 <i>Secretary</i> , 1981-87 <i>President-elect</i> , 1989 <i>President</i> , 1990
1970	Diplomate of American Board of Internal Medicine
1973	New England Rheumatism Society
1975	American Society for Clinical Investigation
1976	Gerontological Society
1977	Biochemical Society
1979	International Glycoconjugate Organization <i>Steering Committee</i> , 1983-1989 <i>Organizing Committee</i> , 1985 <i>Editorial Board</i> , Glycoconjugate Journal, 1984-present
1986	Association of Military Surgeons of the United States
1991	American Society for Cell Biology

Exhibit B

ARTICLES AND PUBLICATIONS (Last 10 Years)

Jeremiah E. Silbert

Rong Y, Sugurnaran G, Silbert JE, and Spector M: *Proteoglycans synthesized by canine intervertebral disc cells grown in a type I collagen glycosaminoglycan matrix*. Tissue Eng, 8: 1037-1047, 2002.

Silbert JE, and Sugumaran G: *Biosynthesis of chondroitin/dermatan sulfate*. IUBMB Life, 54, 1-10, 2002.

Silbert JE, and Sugurnaran G: *Proteoglycans: Genetic Manipulation in Intact Organisms-On the Road to Function - A starting place for the road to function*. Glycoconj J, 19: 227-237, 2003

Mroz PJ, and Silbert JE: *Effects of [3H]glucosamine concentration on [311]chondrotin sulphate formation by cultured chondrocytes*. Biochem J, 376:511-515, 2003.

Mroz PJ, and Silbert JE: *Use of 3H-glucosamine and 35S-sulfate with cultured human chondrocytes to determine the effect of glucosamine concentration on formation of chondroitin sulfate*. Arthritis Rheum, 50:3574-3579, 2004.

Blinn CM, Dibbs ER, Hronowski LJJ, Vokonas PS, and Silbert JE: *Fasting serum sulfate levels before and after development of osteoarthritis in participants of the Veterans Administration Normative Aging Longitudinal Study do not differ from levels in participants in whom osteoarthritis did not develop*. Arthritis Rheum, 52:2808-2813, 2005.

Biggee BA, Blinn CM, McAlindon TE, Nuite M, and Silbert JE: *Low levels of human serum glucosamine after ingestion of glucosamine sulphate relative to capability for peripheral effectiveness*. Ann Rheum Dis. 65:222-226, 2006.

Blinn CM, Biggee BA, McAlindon F, Nuite M, and Silbert JE: *Sulfate and osteoarthritis: Decrease of serum sulfate levels during a three hour fast and during a three hour glucose tolerance test*. Ann Rheum Dis. 65:1223-1225, 2006.

Biggee BA, Blinn CM, Nuite M, Silbert JE, and McAlindon TE: *Effects of oral glucosamine sulphate on serum glucose and insulin during an oral glucose tolerance test of subjects with osteoarthritis*. Ann Rheum Dis. 66:260-262, 2007.

Biggee BA, Blinn CM, Nuite M, McAlindon TE, and Silbert JE: *Changes in serum levels of glucosamine and sulphate after ingestion of glucosamine sulphate with and without simultaneous ingestion of glucose*. Ann Rheum Dis. 66:1403-1404, 2007.

Silbert JE: *Dietary glucosamine under question*. Glycobiology, 19:564-567-2009

Silbert JE: *Glycosaminoglycan metabolism before molecular biology: reminiscences of our early work*. Glycoconj J, 27:201-209, 2010.