

**ANALYSIS OF AGREEMENT CONTAINING CONSENT ORDER  
TO AID PUBLIC COMMENT  
*In the Matter of Thermo Fisher Scientific Inc., File No. 131-0134***

**INTRODUCTION**

The Federal Trade Commission (“Commission”) has accepted from Thermo Fisher Scientific Inc. (“Thermo Fisher”), subject to final approval, an Agreement Containing Consent Order (“Consent Agreement”), which is designed to remedy the anticompetitive effects likely to result from Thermo Fisher’s proposed acquisition of Life Technologies Corporation (“Life”). Pursuant to an agreement signed on April 14, 2013, Thermo Fisher plans to acquire Life for approximately \$13.6 billion. The Commission’s Complaint alleges that the proposed acquisition, if consummated, would violate Section 7 of the Clayton Act, as amended, 15 U.S.C. § 18, and Section 5 of the Federal Trade Commission Act, as amended, 15 U.S.C. § 45, by lessening competition in the markets for: (1) short/small interfering ribonucleic acid (“siRNA”) reagents; (2) cell culture media; and (3) cell culture sera. Under the terms of the Consent Agreement, Thermo Fisher is required to divest its gene modulation business (which includes siRNA reagents) and its cell culture media and sera business to GE Healthcare.

The Consent Agreement has been placed on the public record for 30 days to solicit comments from interested persons. Comments received during this period will become part of the public record. After 30 days, the Commission will again review the Consent Agreement and the comments received, and decide whether it should withdraw from the Consent Agreement, modify it, or make it final.

**THE PARTIES**

Thermo Fisher, headquartered in Waltham, Massachusetts, is a leading global manufacturer and distributor of scientific products, laboratory equipment, and laboratory consumables. Thermo Fisher supplies siRNA reagents under its Dharmacon brand, and cell culture media and sera under its HyClone brand.

Headquartered in Carlsbad, California, Life manufactures and supplies a wide range of laboratory equipment and consumables to customers worldwide. Life sells siRNA reagents under its Ambion brand, and cell culture media and sera under its Gibco brand.

**THE RELEVANT PRODUCTS AND MARKET STRUCTURES**

**siRNA Reagents**

siRNA reagents are used to study gene function by selectively turning off or “silencing” gene expression and inhibiting protein synthesis. Scientists use siRNA reagents in connection with a number of important applications, including the study of the cause of disease, genetic research, and agricultural research and crop production. Customers, which consist of biopharmaceutical companies, universities, and other research institutions, can purchase siRNA

reagents either individually or as “libraries,” which are curated collections of reagents used to study the effect of gene silencing on particular groups of interrelated genes.

The market for siRNA reagents is currently highly concentrated. It is effectively limited to four significant suppliers of siRNA reagents worldwide—Thermo Fisher, Life, Sigma-Aldrich Corp. (“Sigma-Aldrich”), and Qiagen N.V. (“Qiagen”)—each of which holds a license for intellectual property (the “Tuschl patents”) necessary to manufacture and supply high-quality siRNA reagents. Thermo Fisher and Life currently dominate the supply of siRNA reagents both in the United States and worldwide due to the breadth of their product offerings and their reputation for superior quality. Only Thermo Fisher and Life offer a siRNA library for the full human genome, as well as technologically advanced second-generation siRNA reagents. For sales of individual siRNA reagents, Thermo Fisher and Life have a combined market share exceeding 50%, whether measured by U.S. or worldwide sales. For siRNA libraries, Thermo Fisher and Life combine for a market share in excess of 90%.

In addition to the four suppliers of siRNA reagents with licenses to the Tuschl patents, there is a fringe group of suppliers that offers “design-around” siRNA reagents. None of these companies, however, has a full set of individual siRNA reagents, nor do they have library offerings. Because customers view design-around siRNA reagents as significantly less reliable, there is substantially less demand for these products than for Tuschl siRNA reagents. The combined sales by, and market share of, these fringe suppliers are very low.

### **Cell Culture Media and Sera**

Living cells in an organism obtain necessary nutrients directly from the blood and biological tissues that surround them. To grow cells for use and study outside the body, scientists utilize cell culture products like media and sera. Cell culture media are mixtures of a variety of components—including salts, sugars, amino acids, and vitamins—that create a healthy environment for cells to grow. Cell culture serum, derived from animal blood, is rich in nutrients and growth factors and is used as a supplement to cell culture media for propagating mammalian cells. Serum is primarily a byproduct of the cattle industry, since bovine blood is extracted as cattle are slaughtered. The most common and widely used type of cell culture serum is fetal bovine serum (“FBS”) due to its high quality and low risk for contamination, although other types of sera, including adult bovine sera, newborn calf sera, calf sera, equine sera, and porcine sera are used to a limited degree. Many areas of research depend on cell culture media and sera, including immunology, oncology, pathology, stem cell research, neuroscience, and virology.

The cell culture media market is currently concentrated, with three suppliers worldwide, Thermo Fisher, Life, and Sigma-Aldrich, controlling a combined share of more than 80% of the market. These three firms have the largest market shares because customers, especially large biopharmaceutical companies, view them as having the best reputations for high-quality products and the necessary production scale to meet their needs. Other market participants in the cell culture media market include Lonza Group Ltd., a distant fourth player, and a fringe of other firms that collectively account for a small share of the market. Post-acquisition, Thermo Fisher and Life would have at least a 50% share of the cell culture media market, whether measured by U.S. or worldwide sales.

The market for cell culture sera is also highly concentrated and controlled by three major players: Thermo Fisher, Life, and Sigma-Aldrich. Life's market share is approximately 40%, while Thermo Fisher's is approximately 20%. Sigma-Aldrich is a somewhat smaller player than Thermo Fisher. Other than these three firms, there are fringe suppliers that participate in the cell culture sera market, but they are of limited competitive significance because, among other things, they lack reputations and track records for quality and reliability.

### **RELEVANT GEOGRAPHIC MARKET**

The relevant geographic market in which to evaluate the competitive effects of Thermo Fisher's proposed acquisition of Life in each of the relevant product markets is no narrower than the United States and may be as broad as the entire world. While some of the relevant products are subject to U.S. federal regulation and protected by patents, sophisticated foreign suppliers with existing products—in the case of siRNA reagents, those with a license to the Tuschl patents—can establish reputations for high-quality products and good customer service and compete for business in the United States. Further, foreign suppliers who lack a U.S. presence are able to contract with third-party service and distribution partners and compete for sales opportunities in the United States.

### **ENTRY**

It is highly unlikely that new entry or repositioning, or expansion by current market participants would deter or counteract the anticompetitive effects of the proposed transaction, let alone in a timely manner. The most significant barrier to entry and expansion in the market for siRNA reagents is access to the Tuschl patents technology, which only Thermo Fisher, Life, Qiagen, and Sigma-Aldrich are currently licensed to use. No additional firms are likely to gain access to Tuschl patents licenses in the future. Additional barriers to entry include the technical difficulty of designing and producing siRNA reagents and the substantial upfront investment required to compete effectively in the market. Similarly, timely entry into the markets for cell culture media and sera is unlikely because of the premium customers place on suppliers' track records and reputations for reliable, high-quality products. In addition, the cost of building sufficient capacity to supply large customers, like biopharmaceutical companies, is substantial and largely unrecoverable, making entering either of these markets, which have only limited sales opportunities for an untested entrant, unattractive.

### **EFFECTS OF THE ACQUISITION**

The proposed acquisition likely would cause significant competitive harm to consumers in the markets for siRNA reagents, cell culture media, and cell culture sera. Thermo Fisher and Life, the two leading suppliers of siRNA reagents, are particularly close competitors, targeting the same customers and frequently cutting prices specifically to gain an advantage against one another. Moreover, Thermo Fisher and Life compete directly to develop improved, higher-quality siRNA reagents. The elimination of this close competition and the significant increase in concentration in the siRNA reagent market generally, is likely to result in substantial

anticompetitive effects, including in the form of higher prices and reduced choice and innovation.

The proposed acquisition would also likely result in substantial anticompetitive effects in the cell culture media and sera markets by eliminating the close competition between Thermo Fisher and Life, which has benefited consumers significantly. Customers currently benefit from this head-to-head competition by leveraging Thermo Fisher and Life against each other to receive better pricing and higher quality products and services. By eliminating Life as an independent competitor and substantially increasing concentration in the cell culture media and sera markets, the proposed acquisition would likely result in increased prices and reduced services to customers, as well as diminished innovation.

### **THE CONSENT AGREEMENT**

The Consent Agreement eliminates the competitive concerns raised by Thermo Fisher's proposed acquisition of Life by requiring Thermo Fisher to divest assets and provide necessary transitional services to acquirer GE Healthcare. The divested assets include Thermo Fisher's gene modulation business, Dharmacon, which includes its siRNA reagents business, and HyClone, Thermo Fisher's cell culture media and sera business.

GE Healthcare, the proposed acquirer, has the relevant industry experience, reputation, and resources to restore the benefits of competition that would be lost through the proposed transaction. GE Healthcare is headquartered in the United Kingdom and has operations in North America, Europe, Asia, South America, and Australia. GE Healthcare manufactures and sells a wide variety of life sciences products. It currently has a very small cell culture business, which sells both media and sera, providing it with relevant experience in the cell culture space. Although GE Healthcare does not currently sell siRNA, it has plans to integrate Dharmacon into its existing life sciences product portfolio.

Pursuant to the Consent Agreement, GE Healthcare will acquire substantially all of the HyClone cell culture media and sera assets, except assets relating to single-use-technology, which is a plastics and consumables business and not an area of competitive overlap between the merging parties. GE Healthcare will also acquire all gene modulation and siRNA reagents-related assets necessary to replace the loss of competition presented by the proposed acquisition. As part of the proposed divestiture, GE Healthcare will receive all relevant intellectual property—including licenses to the Tuschl patents—know-how, and information required to produce and sell siRNA reagents and cell culture media and sera. It also will have the right to interview and offer employment to employees associated with the divested businesses. In addition, Thermo Fisher will provide GE Healthcare with transition services for a limited period to enable it to immediately compete in the relevant markets with the divested assets.

The proposed divestiture to GE Healthcare is sufficiently large that it will be reportable to several foreign competition authorities in suspensory jurisdictions. Thus, the proposed Consent Agreement provides forty-five days from the date Thermo Fisher consummates its acquisition of Life to accomplish the divestiture to GE Healthcare, with the proviso that if the foreign approvals are secured earlier, the divestiture must be accomplished within ten days of receipt of the final

approval. The proposed Consent Agreement provides that the Commission may appoint a trustee to accomplish the divestitures to another approved acquirer if the divestitures to GE Healthcare are not accomplished within the specified time period.

The purpose of this analysis is to facilitate public comment on the Consent Agreement, and it is not intended to constitute an official interpretation of the proposed Decision and Order or to modify its terms in any way.