EXHIBIT 4

UNITED STATES DISTRICT COURT
DISTRICT OF MASSACHUSETTS

AMGEN INC., Plaintiff, v. F. HOFFMANN-LA ROCHE LTD., a Swiss Company, ROCHE DIAGNOSTICS GmbH, a German Company and HOFFMANN-LA ROCHE INC., a New Jersey Corporation, Defendants.	)	Civil Action No.: 05-12237 WGY

EXPERT REPORT OF HARVEY F. LODISH, Ph.D. REGARDING INFRINGEMENT

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62. The process of covalently linking an inert PEG polymer to a protein is called "pegylation." Using well-understood techniques, PEG is covalently bonded[13] at one or more locations to the protein. A number of recombinantly produced human proteins have been pegylated, including EPO, G-CSF, interferon-α2b, interferon-γ, and IL-2. As early as 1977, publications described pegylated proteins as exhibiting extended half-life in the blood without triggering an immunogenic response (*i.e.*, formation of antibodies.). (*See* Exh. 21 (Abuchowski et al., "*Effect of Covalent Attachment of Polyethylene Glycol on Immunogenicity and Circulating Life of Bovine Liver Catalase*," J. Biol. Chem., (1977) 252:3582-3586). The longer *in vivo* half-life of pegylated proteins is believed to be the result of reduced clearance through non-specific routes of clearance such as the kidney or liver because of the larger size of the PEG-conjugate as well potential protection from enzymatic degradation.

63.

Redacted

64.

[13] A "covalent bond" is a bond in which two atoms share a pair of electrons.

182.

Redacted

183.

184. Pegylation is a conventional technique for increasing the half-life of a therapeutic

protein. Like a chemical protective group, the peg molecule in peg-EPO helps protect the glycosylated EPO polypeptide against unwanted chemical reactions such as enzymatic degradation in the bloodstream or clearance by non-specific routes such as the liver or kidney. This is not a circumstance where pegylation has converted a therapeutically useless molecule into one having therapeutic utility. Rather, the PEG is utilized here to extend the half-life of a therapeutically effective molecule in hopes of offering longer intervals between doses.

185. **Redacted**

186.

Redacted

Executed this 6th day of April, 2007 at Boston, Massachusetts.

HARVEY F. LODISH, PH.D.