Satumomab pendetide is a conjugate produced from the murine MAb CYT-099 (MAb B72.3). MAb B72.3 is a murine MAb of the IgG_{1K} subclass, which is directed to, localizes, and binds with a high molecular weight tumor–associated glycoprotein (TAG-72) that is expressed differentially by adenocarcinomas. (Adenocarcinoma is a technical name for a malignant tumor derived from a gland or glandular tissue or a tumor whose gland-derived cells form gland-like structures.) In vitro immunohistologic studies have reported MAb B72.3 to be reactive with about 83% of colorectal adenocarcinomas, 97% of common epithelial ovarian carcinomas, and most breast, non–small cell lung, pancreatic, gastric, and esophageal cancers evaluated.

OncoScint CR/OV is prepared by site-specific conjugation of the linker–chelator, glycyl tyrosyl-(*N*,e-diethylenetriamine pentaacetic acid)-lysine hydrochloride, to the oxidized oligosaccharide component of MAb B72.3. Each kit contains all of the nonradioactive ingredients necessary to produce a single-unit dose of OncoScint CR/OV-In for use as an intravenous injection. Each kit contains two vials. A single-dose vial of OncoScint CR/OV, formulated with sterile water for injection, contains 1 mg of satumomab pendetide in 2 mL of sodium phosphate–buffered saline solution adjusted to pH 6 with hydrochloric acid. OncoScint CR/OV is sterile, pyrogen-free, clear, and colorless, and it may contain some translucent particles. A vial of sodium acetate buffer contains 136 mg of sodium acetate trihydrate in 2 mL of water for injection adjusted to pH 6 with glacial acetic acid. It is sterile, pyrogen-free, clear, and colorless. Neither solution contains a preservative. Each kit also contains one sterile 0.22-mm Millex GV filter, prescribing information, and two identification labels. The kit should be stored upright in a refrigerator (2°C to 8°C) but not frozen.

Proper aseptic technique and precautions for handling radioactive materials should be employed. Waterproof gloves should be worn during radiolabeling. Consistent with the instructions provided, the sodium acetate buffer solution must be added to the ^{111}In chloride solution to buffer it prior to radiolabeling satumomab pendetide. After radiolabeling with ^{111}In, the immunoscintigraphic agent, OncoScint CR/OV-In (^{111}In-satumomab pendetide) is formed. The injection should be administered within 8 hours after radiolabeling.

Tocilizumab (Actemra)

IL-6, a proinflammatory cytokine, plays a primary role in causing local and systemic manifestations of rheumatoid arthritis. Tocilizumab is the first IL-6 receptor inhibiting MAb for the treatment of rheumatoid arthritis. It competitively inhibits the binding of IL-6 to its receptor, thereby preventing IL-6 signal transduction to inflammatory mediators to summon B and T cells.

Tocilizumab is a fusion of murine and human components. The drug was engineered by grafting the antigen-binding regions of the murine antihuman IL-6R antibody to the human IgG1 framework, which is associated with complement fixation. The resulting antibody has a longer half-life, that is, 240 hours, achieved after the third dose of 8 mg/kg in humans. The drug is administered as an IV infusion every 4 weeks for 3 months. The final assessment is performed 4 weeks after the third infusion. Because the drug is a humanized antibody, infusion-related adverse effects, that is, hypersensitivity reactions, might be expected.

Trastuzumab (Herceptin)

In September 1998, trastuzumab became the second MAb approved to treat cancer. It is indicated for the treatment of metastatic breast cancer or cancer that has spread beyond the breast and lymph nodes under the arm. The drug is approved for monotherapy in certain patients who have attempted chemotherapy with little success or as a first-line treatment of metastatic disease in combination with paclitaxel (Taxol) in first-line metastatic breast cancer therapy patients whose tumors overexpress the HER2 protein. In 2008, it was approved as part of a treatment regimen containing doxorubicin, cyclophosphamide, and docetaxel (Taxotere) and as part of a regimen with docetaxel and carboplatin.