

### 10.2.6 Targeted Therapy

Targeted therapy is a new type of cancer treatment that uses drugs or other substances to more precisely identify and attack cancer cells (Anon., n.d.-r). It is technically quite similar to chemotherapy, but targeted therapy drugs do not work in the same manner as standard chemotherapy drugs (Anon., n.d.-r). For example, many targeted drugs target specific molecular differences between cancer cells and normal cells (Anon., n.d.-r). The first targeted therapies blocked the estrogen receptor molecule, inhibiting the growth of breast cancer (Osborne and Schiff, 2011). Another common example is the class of Bcr-Abl inhibitors, which are used to treat chronic myelogenous leukemia (CML) (Weisberg et al., 2007). Currently, targeted therapies exist for breast cancer, multiple myeloma, lymphoma, prostate cancer, melanoma, and other cancers (LaCasse et al., 2008).

Targeted therapies also have some drawbacks, such as cancer cells becoming resistant to the therapies (Groenendijk and Bernards, 2014). For this reason, targeted therapies may work best when used with other targeted therapies or with other cancer treatments, such as surgery, chemotherapy, and/or radiation (Groenendijk and Bernards, 2014). Drugs for some targets are difficult to develop due to the target's structure and the target's function in the cell (Gashaw et al., 2012).

### 10.2.7 Other Procedures and Techniques

There are several other cancer therapies. Some of these include the following:

- **Cryosurgery** uses extreme cold produced by either liquid nitrogen or argon gas to destroy abnormal tissues (Anon., 2003). This therapy can be used for early-stage skin cancer, retinoblastoma, and precancerous growths on the skin and cervix (Anon., 2003).
- **Laser** is a type of treatment in which powerful beams of light are used to cut through tissue. It can also be used to shrink or destroy tumors or growths that might turn into cancer because the laser beam has an incomparable advantage in that it can focus accurately on tiny areas (Anon., 2015b). For this reason, a laser is widely used to treat tumors on the surface of the body or on the inside lining of internal organs. Examples include basal cell carcinoma, cervical changes that might turn into cancer, and cervical, vaginal, esophageal, and nonsmall cell lung cancer (Anon., 2015b).
- **Hyperthermia** is a type of treatment to use high heat in small areas of body tissue to damage and kill cancer cells or make them more sensitive to radiation and certain chemotherapy drugs (Anon., 2016h). Radiofrequency ablation is one type of hyperthermia that uses high-energy radio waves to generate heat (Anon., 2016h). Hyperthermia is not widely available and is being studied in clinical trials. It will be discussed in detail in the next section.