Breast cancer is one of the most common cancers in women, with an estimated 192,370 new cases and 40,170 deaths in the United States in 2008 (Jemal et al., 2009). The prognosis is favorable for women diagnosed during the early stages of the disease, when the cancer remains localized, and women have a 95% survival rate at five years. However, many women ultimately develop recurrent or metastatic tumors (Ries et al., 2007). In such cases, the prognosis is far less favorable, with a projected median survival of two to three years; at that stage, the disease is considered incurable. Thus, an urgent need exists for new therapies that have improved efficacy, offering patients with metastatic breast cancer (MBC) effective treatment during the advanced stages of their disease.

The choice of treatment regimen for patients with breast cancer is complex and is influenced by patient characteristics (e.g., age), tumor-related factors (e.g., size, stage), lymph node status, presence of metastases, hormone receptor and HER2/neu status, and prior treatment history. Following surgery to remove the primary tumor, a range of effective treatment options are available, including radiotherapy, hormone therapy, targeted therapy (e.g., trastuzumab for HER2/neu-positive disease), and chemotherapy. Selection of the appropriate treatment regimen is dependent on disease stage, tumor characteristics, and the patient’s age and general health (National Comprehensive Cancer Network [NCCN], 2009). Cytotoxic chemotherapy with taxanes or anthracyclines is a treatment of choice for patients with tumors that are hormone receptor-negative, refractory to hormone therapy, or rapidly progressing regardless of hormone status (NCCN, 2009). Patients with hormone receptor-positive disease who are refractory to hormone receptor drug therapy also may benefit from taxane-based chemotherapy.

Advances in chemotherapy treatment options have improved patient outcomes; as such, the breast cancer treatment landscape is evolving continually. The introduction of the epothilone ixabepilone (Ixempra®, Bristol-Myers Squibb), which was approved by the U.S. Food and Drug Administration (FDA) for