Endocrine therapy was most widely used modality for breast cancer patients. Basically, expression of either Estrogen Receptor (ER) or Progesterone Receptor (PR) predicts the response to therapy, its positive predictive value seems to be around 50-60%. In addition, so called “acquired resistance (secondary resistance)”, which is the development of resistance during long-term single endocrine therapy, has been important research issue. Simultaneous use of molecular targeting drug such as mTOR inhibitor or PI3K pathway inhibitor with second endocrine therapy could be important strategy for this acquired resistance. Although at this moment there is no companion assay for evaluating the molecular mechanism of acquired resistance in real time manner, we try to imagine the type of resistance from patient treatment history. Obviously the assay for this purpose should be urgent research target probably developed with liquid biopsy.

In this session, we would review the current understanding of primary and secondary resistance, and try to figure out the way for personalized medicine in endocrine therapy.