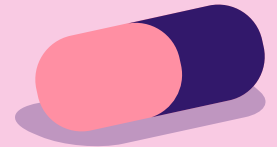
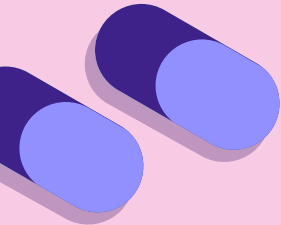


# 1.1 Introduction

**Cancer** is one group of the most terrifying diseases in modern society, which involves abnormal cell growth with potentially spreading and invading to other tissues of the body. Cancer is a tough medical problem that threatens people's health. Especially, breast cancer has been the most common cancer to women. Previous statistics have shown about 12% of women in the United States were diagnosed with breast cancer, while around 3.5% of them were die of it. On the approximately past 2 decades, there were about 28 death per 10000 women in every year, and the rate has remained constant during this period.



## 1.2 BACKGROUND

Breast cancer occurs as a result of a tumor; however, a tumor does not mean cancer. It can be benign (not cancerous), pre-malignant (pre-cancerous), or malignant (cancerous). Many researches have shown that appropriate treatments and early detection to the benign and pre-malignant tumor can effectively limit the impact of the breast cancer to patients or even cure the tumor.

