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**Intellectual Property Status:**
*Patent Pending*

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# The novel anti-cancer drug dolastatin 16 and total synthesis of two new amino acid constituent units

**AzTE Case # M11-102**

## Invention Description

Dolastatin compounds, isolated from the sea hare (sea slug) *Dolabella auricularia*, have been shown to have remarkable anticancer properties. In particular, dolaststin 16 has been shown to be an extraordinarily potent cancer cell growth inhibitor. Its 3-dimensional structure, however, has heretofore remained unknown.

Researchers at Arizona State University have determined the 3-dimensional X-ray crystal structure of dolaststin 16, thus paving the way for further development. Additionally, they have determined a way to stereoselectively synthesize two unique amino acid units of dolaststin 16, dolamethylleuine (DmJ) and dolaphenvaline (Dpv).

This work allows for the more facile synthesis of dolaststin 16 and should facilitate its progression into pre-clinical development.

## Potential Applications

Inhibiting cancer cell growth

Treating many types of cancer

Antifungal treatments

## Benefits and Advantages

Potentially more potent against cancer than dolastatins 10 and 15, which themselves are in clinical trials

Probable efficacy against fungal infections