In 1966 RTI chemists isolated Taxol from the bark of *Taxus brevifolia*, and in 1971 Drs. Wall, Wani, and colleagues published its complete structure. Discovery of its unique mode of action by Dr. Susan Horwitz in 1979 catalyzed taxol’s development by NCI. Supplies of the naturally occurring drug limited progress, but response rates in ovarian cancer clinical trials were remarkable. Bristol-Myers Squibb obtained rights to develop taxol and, in late 1992, FDA approval was granted for its use in refractory ovarian cancer. In 1993, a semi-synthetic route for taxol from renewable precursors resolved both supply and environmental concerns.

**TAXOL Timeline**

- **1962**
  - *Taxus brevifolia* collected in Washington state

- **1966-70**
  - Studies to characterize taxol structure

- **1971**
  - Taxol structure reported to *J. of Am. Chem. Soc.*

- **1979**
  - Unique mechanism of action determined: promoting and stabilizing microtubule assembly

- **1985-86**
  - Phase II clinical trials, activity in ovarian cancer

- **1992**
  - Approved in record time for use against refractory ovarian cancer

- **1994**
  - Approved for use against breast cancer

- **1997**
  - Approved for AIDS-related Kaposi’s sarcoma in the US

- **1999**
  - Taxol/cisplatin approved in US for non-small-cell lung cancer

- **2002**
  - Historical marker dedicated to commemorate original collection of *Taxus brevifolia* 40 years earlier

**Defining Moments**

- **January**
  - X-ray structure of methyl ester side chain

- **April**
  - X-ray structure of taxane core

- **July**
  - Tentative structure of taxol

- **October**
  - Final structure of taxol

**RTI’s Natural Products Laboratory bestowed National Historic Chemical Landmark**