

## **Department of Chemistry Virtual Poster Session-2020**

**Title:** Electrophilic oligodeoxynucleotide synthesis using dM-Dmoc for amino protection.

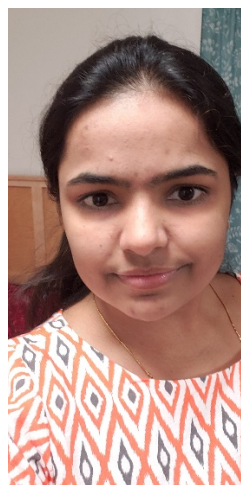
### **Abstract:**

Solid-phase synthesis of electrophilic oligodeoxynucleotides (ODNs) was achieved using dimethyl-Dmoc (dM-Dmoc) as amino protecting group. Due to the high steric hindrance of the 2-(propan-2-ylidene)-1,3-dithiane side product from deprotection, the use of excess nucleophilic scavengers such as aniline to prevent Michael addition of the side product to the deprotected ODN during ODN cleavage and deprotection was no longer needed. The improved technology was demonstrated by the synthesis and characterization of five ODNs including three modified ones. The modified ODNs contained the electrophilic groups ethyl ester,  $\alpha$ -chloroamide, and thioester. Using the technology, the sensitive groups can be installed at any location within the ODN sequences without using any sequence- or functionality-specific conditions and procedures.

### **Reference:**

Shahsavari, S.; Eriyagama, D. N. A. M.; Halami, B.; Begoyan, V.; Tanasova, M.; Chen, J.; Fang, S. *Beilstein J. Org. Chem.* **2019**, *15*, 1116–1128. [doi:10.3762/bjoc.15.108](https://doi.org/10.3762/bjoc.15.108)

### **Biosketch:**



Komal Chillar is currently a PhD student working with Dr. Shiyue Fang. She received her BS and MS degree in Chemistry from University of Delhi (2016) and Mahrishi Dayanand University (2018), respectively. Her research at MTU focuses on the Synthesis of Sensitive Oligodeoxynucleotides (ODN). She is also a Graduate Teaching Assistant (GTA) at MTU.