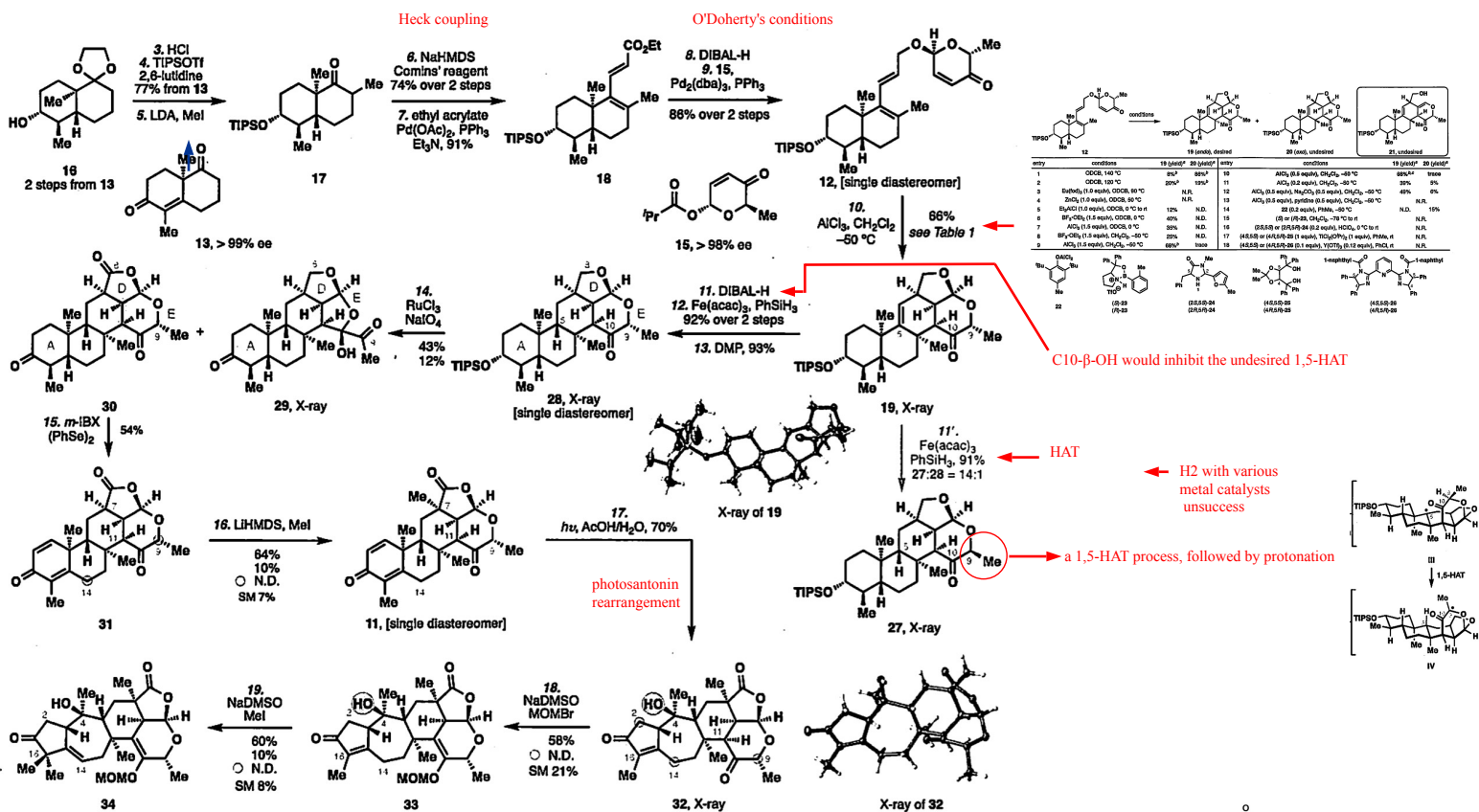


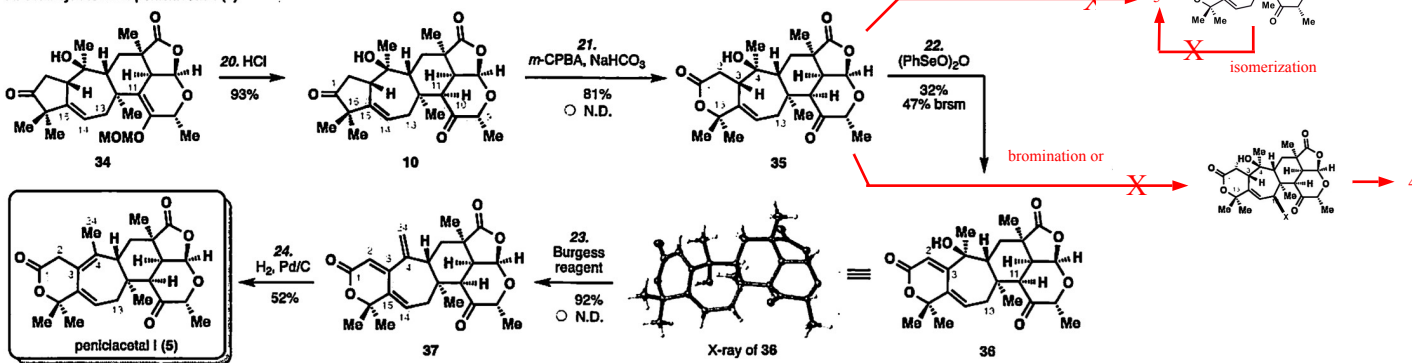
[first total synthesis] [selective approach] [intramolecular SET]  
[solvent-controlled diastereoselective epoxidation]

3,5-dimethylseleninic acid (DMOA)-derived meroterpenoids,



entry	conditions	19 (45:55)	27 (45:55)	28 (45:55)	29 (45:55)	30 (45:55)
1	COCl <sub>2</sub> , 140 °C	89%	89%	18	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	89%
2	COCl <sub>2</sub> , 140 °C	20%	19%	11	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	29%
3	DIBAL-H (1.0 equiv), COCl <sub>2</sub> , 80 °C	N.R.	N.R.	12	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	4%
4	ZnCl <sub>2</sub> (1.0 equiv), COCl <sub>2</sub> , 80 °C	N.R.	N.R.	13	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	4%
5	Et <sub>3</sub> NH <sub>2</sub> (1.0 equiv), COCl <sub>2</sub> , 10 °C	17%	N.D.	14	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	N.D.
6	BF <sub>3</sub> ·OEt <sub>2</sub> (1.0 equiv), COCl <sub>2</sub> , 10 °C	4%	N.D.	15	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	N.D.
7	AlCl <sub>3</sub> (1.0 equiv), COCl <sub>2</sub> , 10 °C	20%	N.D.	16	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	N.D.
8	BF <sub>3</sub> ·OEt <sub>2</sub> (1.0 equiv), COCl <sub>2</sub> , -60 °C	20%	N.D.	17	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	N.D.
9	AlCl <sub>3</sub> (1.0 equiv), COCl <sub>2</sub> , -60 °C	60%	60%	18	AlCl <sub>3</sub> (3.0 equiv), CH <sub>2</sub> Cl <sub>2</sub> , -60 °C	N.D.

A. Total synthesis of peniciacetal I (5)



B. Total synthesis of berkeleyacetal D (4)

