Complex taxane synthesis – the devil is in the details

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Cyclotaxanes are a sub-class of the very well-known taxane diterpene family. They possess an even more complex and intricate molecular backbone than their siblings — the classical taxanes — with additional transannular C-C-bonds across the classical taxane scaffold. For this reason, they have largely eluded their total synthesis over the last three decades. Nevertheless, their chemistry and biology is very rich, starting with their biosynthesis, which they share with the classical taxanes, as well as their biological properties for which this applies in parts as well. However, due to lack of isolated material many congeners of the cyclotaxane sub-class have not been thoroughly tested, and still remain to be biologically evaluated. We herewith present a fragmentation based unified approach to 5 taxane diterpene scaffolds including the total syntheses of 6 congeners with different molecular backbones.

