

Publication**Assembly of the Yersinia injectisome: the missing pieces****JournalArticle (Originalarbeit in einer wissenschaftlichen Zeitschrift)****ID** 1271425**Author(s)** Diepold, Andreas; Wiesand, Ulrich; Amstutz, Marlise; Cornelis, Guy R**Author(s) at UniBasel** [Cornelis, Guy R.](#) ; [Amstutz, Marlise](#) ; [Wiesand, Ulrich](#) ;**Year** 2012**Title** Assembly of the Yersinia injectisome: the missing pieces**Journal** Molecular microbiology**Volume** 85**Number** 5**Pages / Article-Number** 878-92

The assembly of the type III secretion injectisome culminates in the formation of the needle. In Yersinia, this step requires not only the needle subunit (YscF), but also the small components YscI, YscO, YscX and YscY. We found that these elements act after the completion of the transmembrane export apparatus. YscX and YscY co-purified with the export apparatus protein YscV, even in the absence of any other protein. YscY-EGFP formed fluorescent spots, suggesting its presence in multiple copies. YscO and YscX were required for export of the early substrates YscF, YscI and YscP, but were only exported themselves after the substrate specificity switch had occurred. Unlike its flagellar homologue FliJ, YscO was not required for the assembly of the ATPase YscN. Finally, we investigated the role of the small proteins in export across the inner membrane. No export of the reporter substrate YscP(1-137) -PhoA into the periplasm was observed in absence of YscI, YscO or YscX, confirming that these proteins are required for export of the first substrates. In contrast, YscP(1-137) -PhoA accumulated in the periplasm in the absence of YscF, suggesting that YscF is not required for the function of the export apparatus, but that its polymerization opens the secretin YscC.

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