
The challenges to developing adjuvant systems :AS04 and AS02 exemples

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Thanks

to the organizers

and all the people that made
those adjuvant systems possible

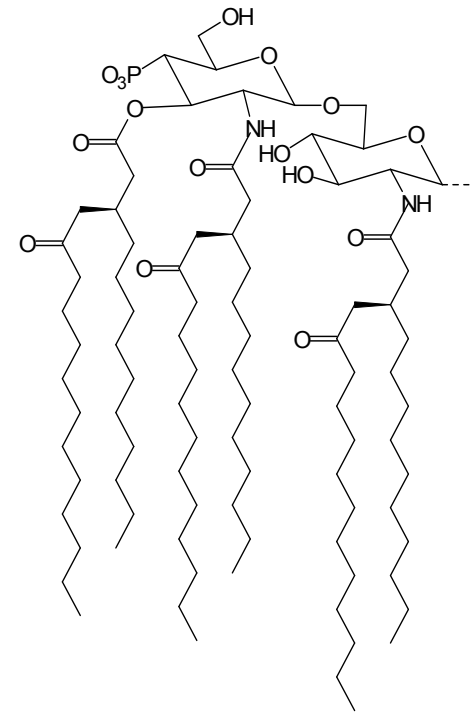
The key steps of developing an adjuvant system

- ❖ Define your strategy for vaccine development
- ❖ Define key elements
- ❖ Establish superiority
- ❖ Secure raw material
- ❖ Ensure adequate read outs and their validation
 - (immunological, chemical, physico chemical, toxicological..)
- ❖ develop process

Define key components

3D-MPL

- ❖ *Lipid A derivative; 3-deacyl Monophosphoryl A*
(Corixa Montana, US)
- ❖ *Obtained from Salmonella Minnesota*
- ❖ *Formulation challenges*
 - Heterogenous, complex molecule
 - hydrophobic
 - tends to clump/aggregate
 - sterilisation



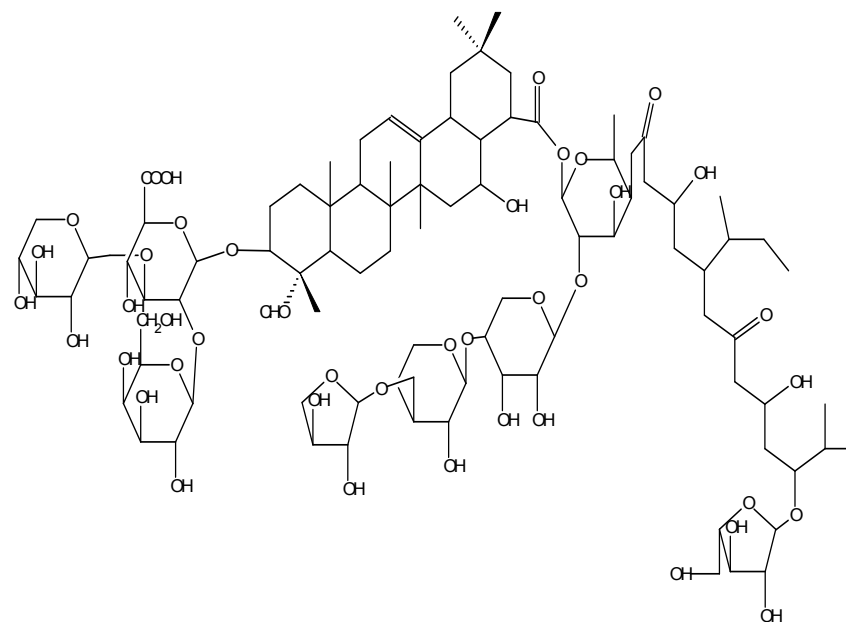
Define key components

QS21

- ❖ *Purified fraction from Quillaja Saponaria bark extract (Quil A)*
(antigenics Inc, US)

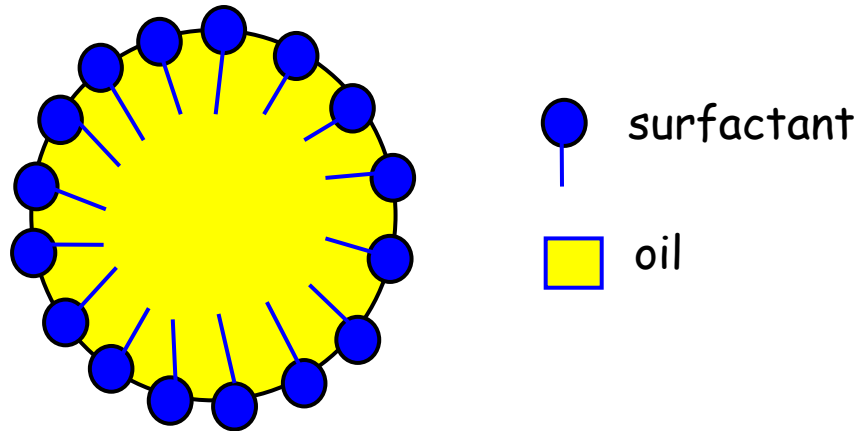
- ❖ *Triterpene Saponin family*

- ❖ *Formulation challenges*
 - unstable (hydrolyses)
 - reactogenic



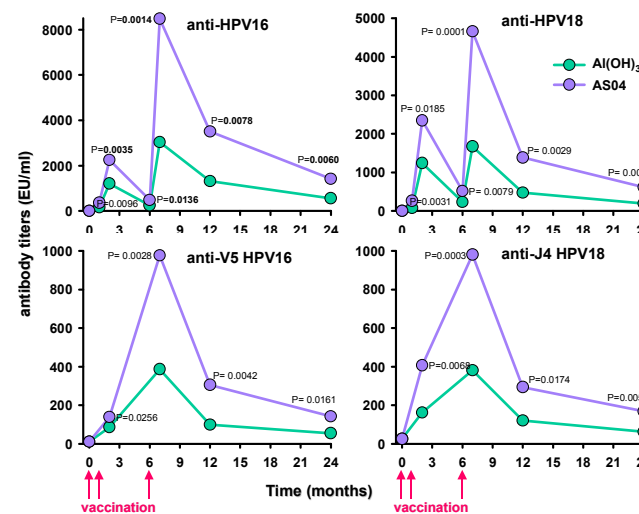
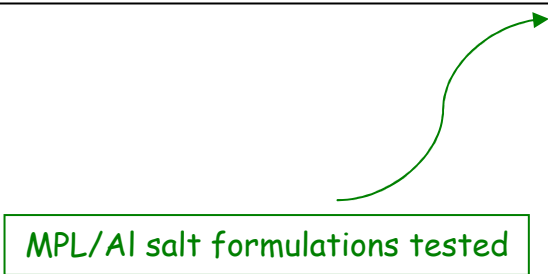
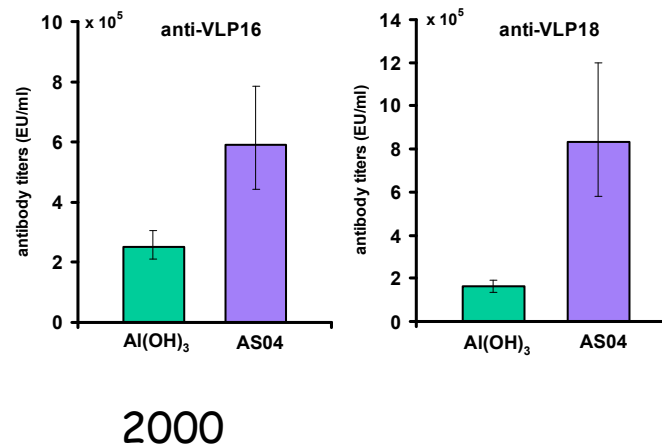
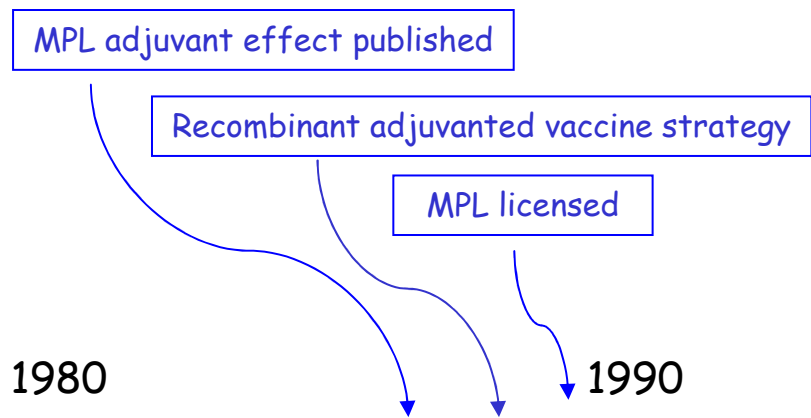
Define key components

Oil in water emulsion

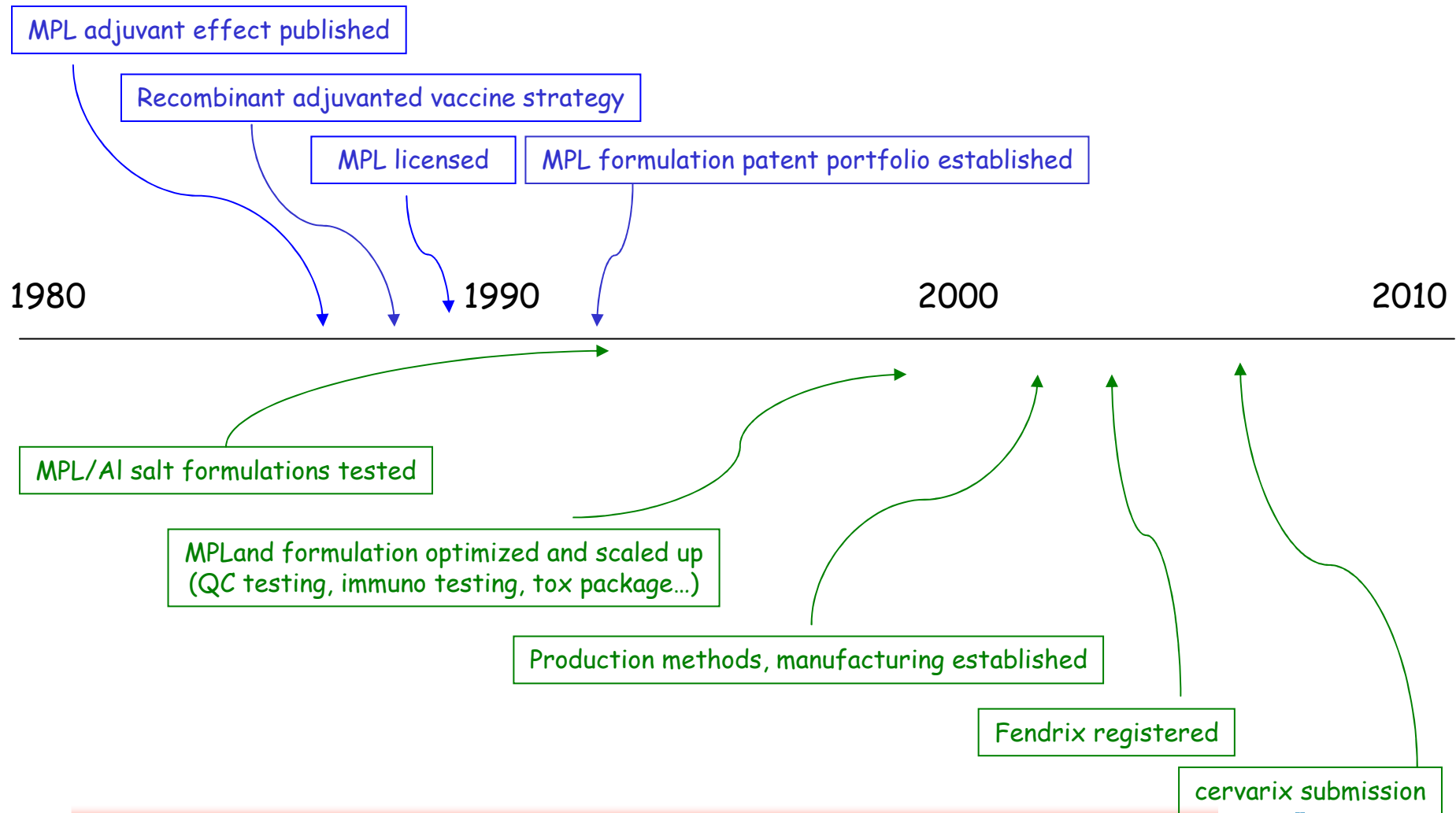


AS04 as an exemple

An history of AS04

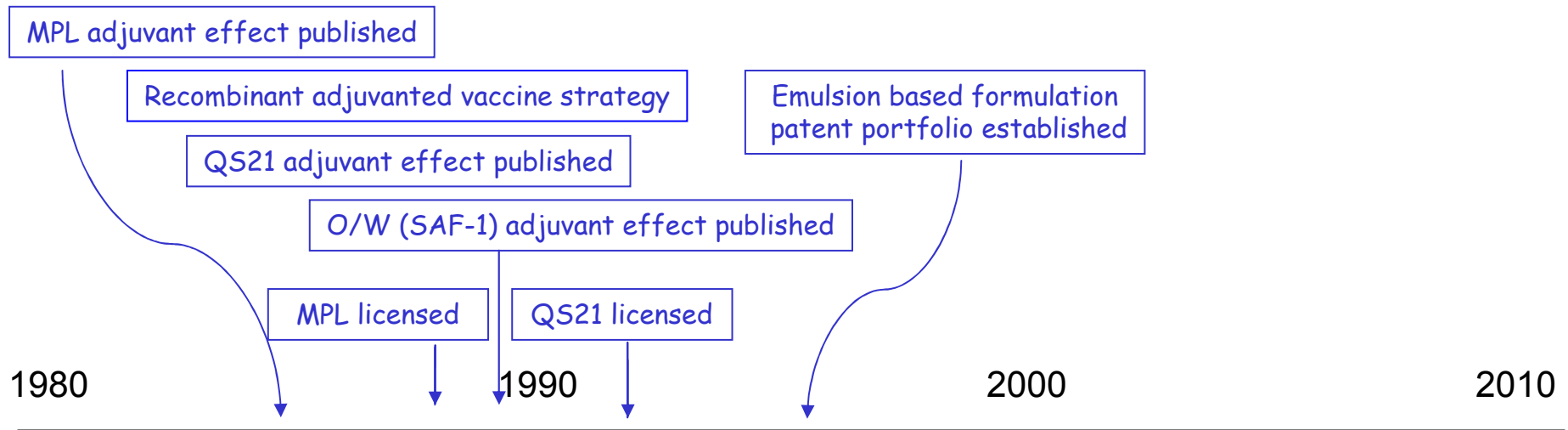


An history of AS04



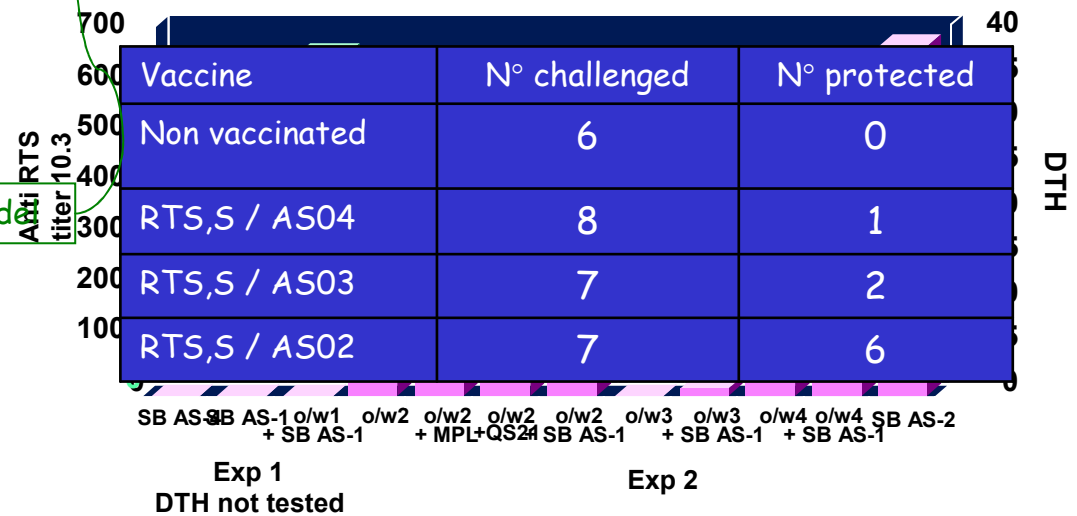
AS02 as an exemple

An history of AS02

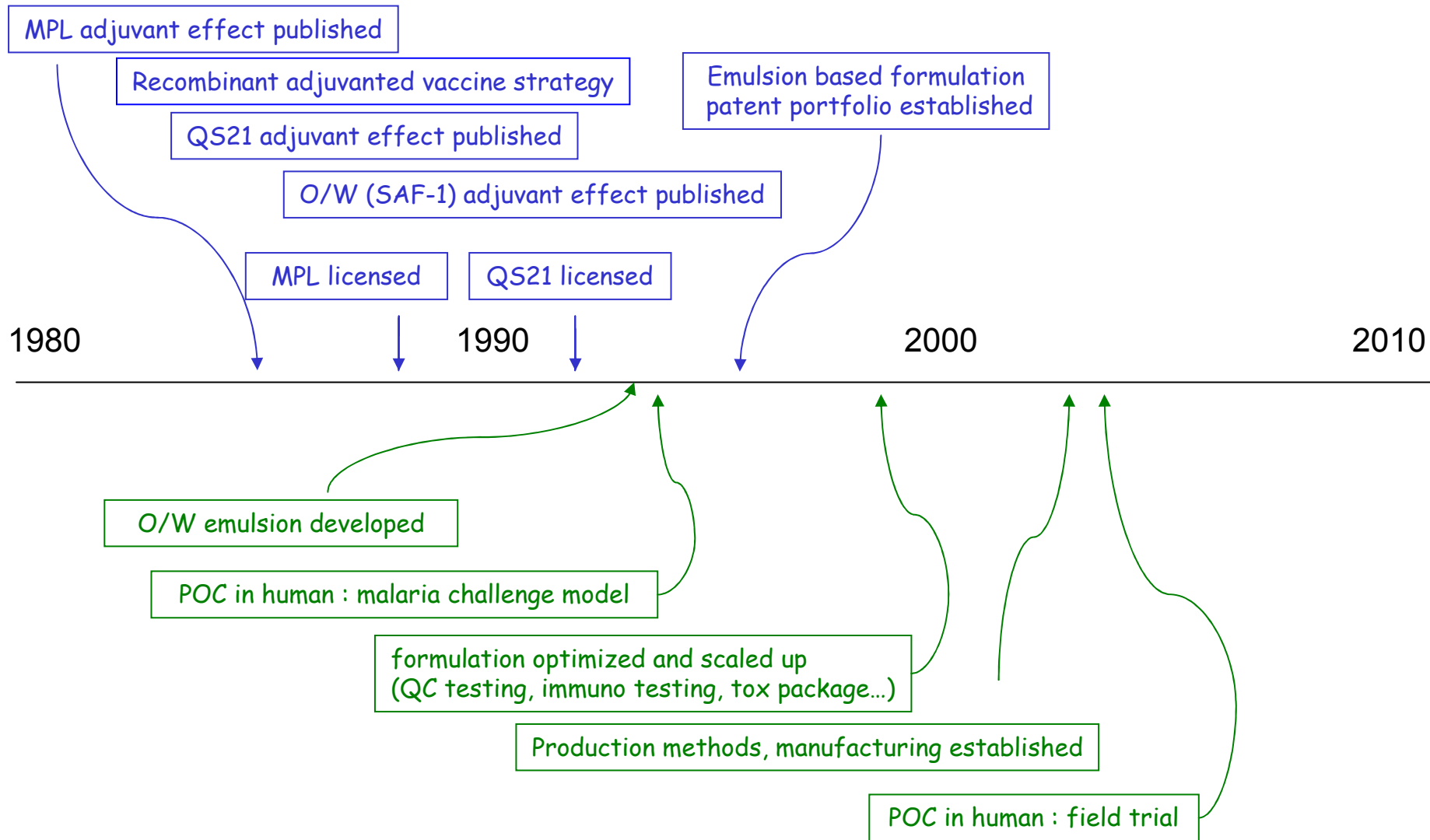


O/W emulsion developed

POC in human : malaria challenge model



An history of AS02



Conclusions

- ❖ GSK adjuvants have been developed over 15 years from conception to validation (clinic and production) with a whole pipeline of vaccines in mind
- ❖ This has been possible only through inter disciplinary work of dedicated people covering fundamental, as well as applied technologies and knowledge
- ❖ Those systems have reached maturity as well as established their relevance for numerous vaccines currently in development or close to registration.
- ❖ This is a lengthy and costly process.....
- ❖and still going