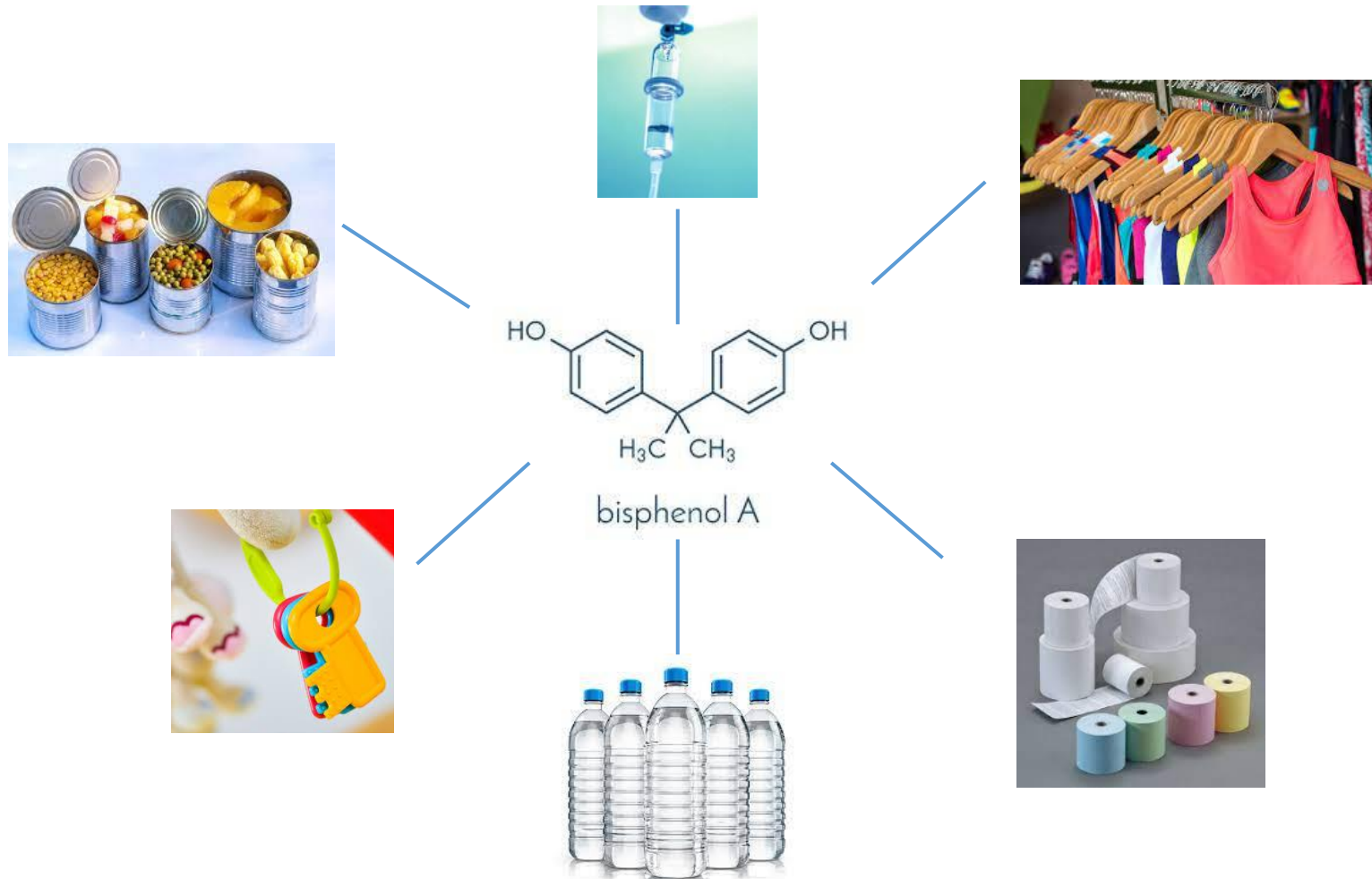


HORMONAL IMPACT OF BISPHENOLS A, F AND S IN HUMAN PLACENTAL CELLS

Elodie OLIVIER

Bisphenol A : chemical used to make polycarbonate plastic + epoxy resins



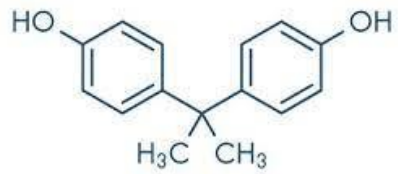
Endocrine disruption effects :

- estrogen-like
- anti-androgen



Impact on the immune system, neuroendocrine process, reproductive function and carcinogenesis

Bisphenol A

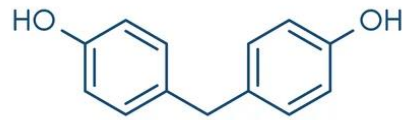


bisphenol A

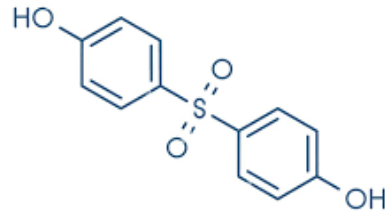


Bisphenol F and S

Same family



bisphenol F



bisphenol S

Replacement



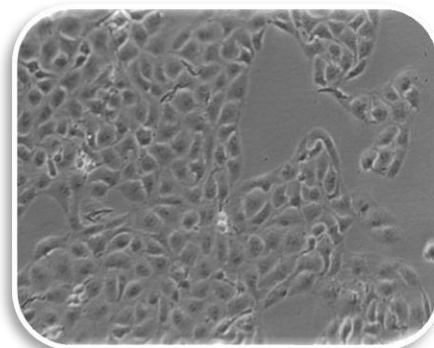
What about their hormonal effects ?

Hormones and pregnancy

- steroid and polypeptide produced by the placenta
- crucial for pregnancy process + fetus growth
- any hormonal alteration → adverse pregnancy outcomes: preeclampsia, intrauterine growth restriction and preterm birth...



Material and methods



Human placental cells

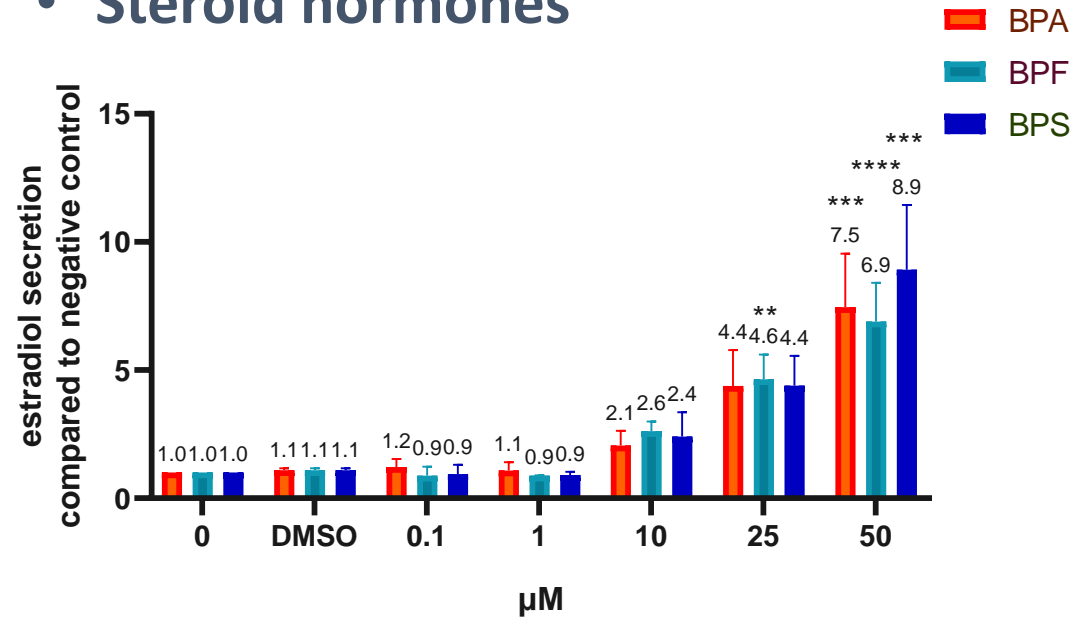
Incubation with
bisphenols A, F and S



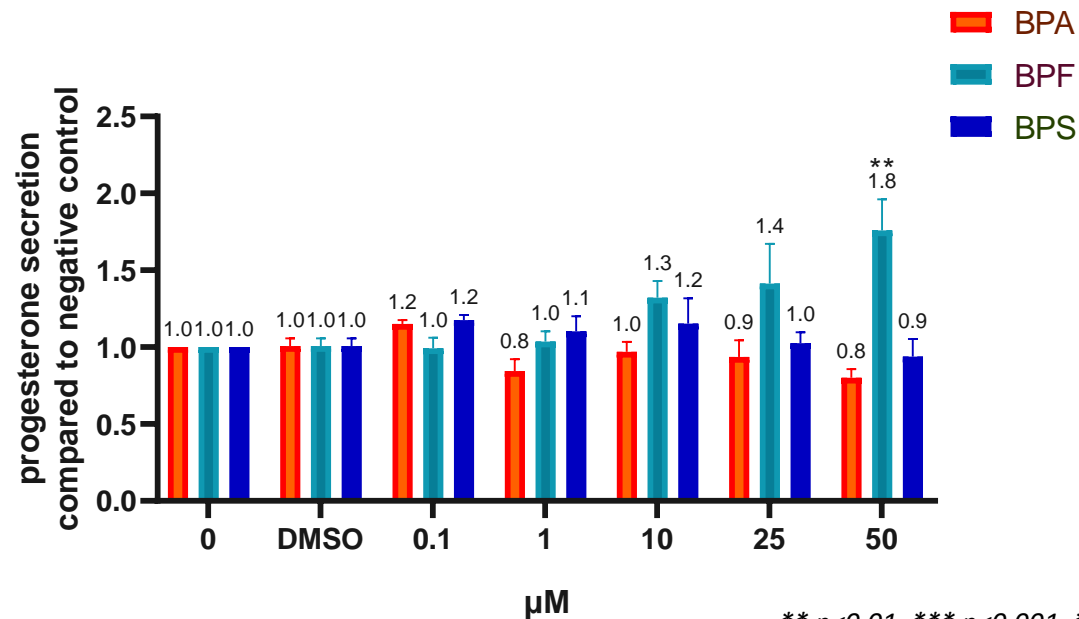
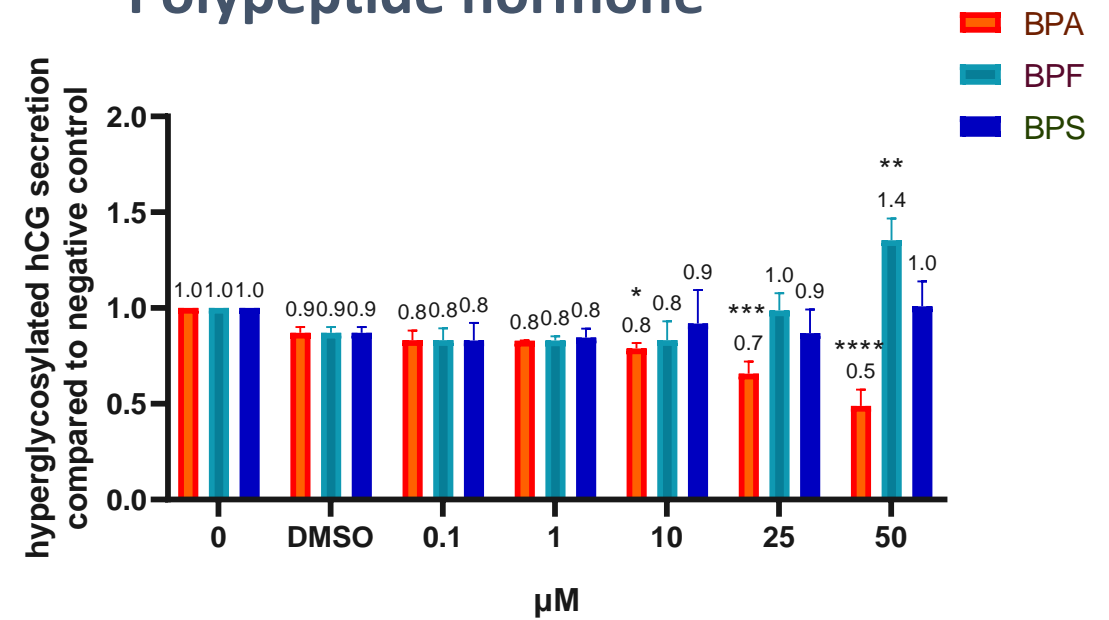
Hormonal dosage on cell
supernatants: steroids
(estradiol and
progesterone), polypeptide
(hyperglycosylated hCG)

Results

• Steroid hormones



• Polypeptide hormone



Conclusion

- All the tested bisphenols alter hormonal secretion and bisphenol A substitution by bisphenols F or S doesn't appear to be a safe alternative for pregnant women
- Previously shown: bisphenols-induced P2X7 cell degenerative receptor activation and apoptotic effects on human placental cells (*Fouyet et al. 2021*)

** $p < 0,01$, *** $p < 0,001$, **** $p < 0,0001$ compared to negative control