Context.
Hormonal contraceptives (like the pill) are the most popular choice for women to avoid pregnancy. However, an increase in awareness of the potentially strong emotional and physical side effects of hormones is driving women away from the pill. Unfortunately, there are no real alternative contraceptives that would be hormone-free yet user-friendly.

Cervical mucus is a natural plug in the women’s cervix that protects the uterus from the outside environment. It is instance especially important to protect the foetus during pregnancy. It is nearly impenetrable by bacteria or sperm cells throughout the menstrual cycles, except on ovulation, when the mucus loosens and allows sperm to penetrate and continue their travel to fertilize the egg. Our hypothesis is that the barrier properties of the mucus can be altered by the addition of certain molecules. Reinforcing the barrier potentially could prevent the penetration of spermatozoa and thus pregnancy.

Your project.
You will be key in helping validate the strategy. Practically, you will conduct in vitro assays to measure the permeability of mucus samples as a function of treatment type and duration. You will use microscopy techniques extensively, but also help characterize the system using a number of chemical and biochemical assays.

Environment.
You will be hosted in the Division of Glycoscience, in the School of Biotechnology of KTH (Stockholm, Sweden) located in AlbaNova. Our laboratory provides the student a dynamic, international, and multidisciplinary research team. The student will perform and gain expertise in biopolymer modification and characterization by fluorescence measurements, microscopic techniques as well as NMR, Zeta-Potential tests, DLS etc. Visit our website for more information about the group: biopolymersforlife.org

Requirements MSc students.
We are looking for enthusiastic, motivated students, who enjoy working as part of a team as well as independently. Ideally, candidates have some previous practical experience or are interested in learning methods used in biomaterial studies.

Please send us a short description of your relevant work experience, your CV, and your motivation.

Thomas Crouzier
crouzier@kth.se
biopolymersforlife.org
https://www.kth.se/profile/crouzier