

Preface

I never thought about writing or editing a book since it is boring and not very useful. Until one day, Mandy from Springer came to my little shared office asking me if I wanted to edit a book. My neighbor lab, PI Hongbing thought I might have something to write about and recommended me to her. It was the time when we had just developed in the lab a way to save urinary proteins on the membrane cheaply and simply. It was named urimem. I was thinking about people who will all have biological samples in their medical record. This may potentially change the gear for biomarker development. If medical records can change the face of medicine, adding biological samples to the information already in the medical record would very likely change the face of medicine again. My excitement did not last very long when I realized that saving urine may not be necessary for all people. It may only be useful for urinary disease patients.

I sat in my cube wondering why people need this urimem in their medical records. In my mind, biomarkers were generated in organs and traveled to the blood waiting for detection, then the blood was full of biomarkers and they jammed the circulation. I realized that people cannot survive if the biomarkers stay in blood forever. I recalled what I taught in angiogenesis class. Angiostatin needs to be continuously infused to maintain the effective concentration in blood. The things that enter the blood need to be removed. The blood needs to be stable. Biomarkers from other organs need to be removed too. Where are they supposed to go? Urine is very likely. I started searching the Internet for teaching material on homeostasis. From a PPT I am still showing around, it showed that in order to maintain the homeostasis of internal environment, wastes were removed by kidney, liver, lung, and skin. Urine is the most directly connected to blood, the cleanest, most accessible, completely noninvasive body fluid.

If human beings were designed and created, urine was probably set just for us to remove the wastes and check the status of our bodies.

The book as a form of publication is slow compared to papers, not to mention meeting abstracts and personal blogs. If a book needs to be edited and published, it has to be usable for a while, at least for a few years. What information is useful for a few years for researchers and students in the field? The most up-to-date

development in the field is not that durable. The most durable things are the things that need to be considered when people want to design an experiment in the field. I believe that nobody needs a book of “the current affair.” Before the book is on the shelf or even online, the information is not up-to-date anymore. We need a book of “all things considered.” The chapters chosen to propose an idea need to be considered. Most of them are not reviews. Some of the chapters are almost the reformat of the paper.

I have been working in the field for a number of years. But I know I am not well known, let alone famous. It is hard to edit a book without supporting participants. I thank those authors who agreed with me on the way this book is organized. I thank all the authors who spent their time to contribute. I thank all my former and current lab members who contributed to the book. I enjoyed working with you. I enjoyed the weekly discussion at the lab meeting. I thank my collaborators Mingxi, Zhihong, and Xiangmei for giving me the chance to work and discuss together. I thank Peng from Springer for going through the tedious editing process. I thank my colleague Xianda and Chengyu for their support. I thank my parents for giving me life and freedom. I thank my wife and other family members who let me enjoy science.

I know this book is far from what I planned and expected. Lots of related topics are not covered because of my limited knowledge and ability, and because of the availability of potential authors. I hope there will be more people participating if we have the next edition in a few years. I believe in this field, which has the potential to change the face of biomarker, biobanking, biotechnology, and eventually, medicine and health.

Urine smells good.

It tastes even better.

NJ, USA, July 2014

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