Establishing nanomedicine

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Nanomedicine is claimed by many to be a brainchild of the past, from Richard Feynman’s quotes that are commonly cited as the origin of all ‘nano’, to science fiction movies of the 1950s and 1960s. However, after a simple investigation in the two most popular scientific publication search engines (PubMed and ISI Web of Knowledge), one immediately realizes that ‘nanomedicine’ as a recognized scientific term is clearly a child of the 2000s. Encouragingly enough for us involved in this field, even though the number of citations using the word ‘nanomedicine’ as a keyword in both search engines is still surprisingly small, there is a healthy increase in the frequency of the term’s use (Figure 1). Such very obvious and un sophisti cated analysis is thought to indicate the following two points: ‘nanomedicine’ is a young term that is still finding its way in the mainstream of scientific literature, and the steep increase in the popularity of the term means that the field is growing rapidly along with acceptance of its ensuing concepts and technologies.

What has helped tremendously in the gradual recognition of the nanomedicine field that we are witnessing today is the consistent support for all aspects and applications of nanotechnology research from public sources of funding.

Figure 1. Citation numbers using the search term ‘nanomedicine’ in two popular scientific publication search engines.
European Commission level, will contain nanomedicine as a strategic theme and specific calls on nanomedicine are expected.

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Despite the committed approach and relative long-term deliverables expected from public funding agencies, the pharmaceutical industry is still apprehensive of nanomedicine. Quite a few big pharma groups are attracted to the concepts and technologies that nanomedicine presents, however, it is still generally considered to be at too early a stage and of high risk. Most of the large pharmaceutical companies are consolidating their ‘nanomedical’ patent portfolios and the technologies that best fit their existing markets in these early days. The stance of venture capital investment is also one of cautious interest before making sure that nanomedicine is not another ‘bubble’ waiting to burst but a real opportunity. The estimated investment from venture capital already expended in this decade is approximately US$900 million. Confidence in the private investment sector for nanomedicine, either large industry or venture capital, will be one of the determining factors in bringing forward all of the budding technologies that public investment is initiating through its current activities, so moving them closer to the clinic and the patient.

With Nanomedicine, we are expecting to act as a valuable platform for discussion, exchange of ideas and stage to showcase all of the nanomedicine activities and their interesting products in every relevant form: technical, clinical, ethical and societal. The journey with nanomedicine promises to be exciting, captivating the public’s attention and eventually leading to the most sophisticated tools against disease ever available to humankind. Let’s see what the next generation will think of our achievements. For the moment, all we have to do is educate the public from as young an age as possible (similar to the animated educational video produced recently by the Japanese Ministry of Science & Technology [5]) (Figure 2) and try with best intentions.

Figure 2. Screen-shot of an animated educational ‘nano’ video for children in Japan.

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