



Applied StemCell

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## FAQ

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### Teratoma Formation Analysis

**Cat. Number: ASC-6008**

**1. What kind of method/protocol do you use?**

We inject under the kidney capsule and in testis to obtain the best result.

**2. How many sites do you inject for each cell line?**

We inject to six sites in total, three under the kidney capsule and three in testis. Additionally we inject our control cell line to at least two sites.

**3. What is your success rate?**

The success rate depends on the cell line. For mouse ES and iPS cell lines we have a 100% success rate and for human ES/iPS cells about 82%. However, it is known that not all human iPS cell lines do form teratomas even though they express pluripotency markers..

**4. How long does it take to get the result?**

The turn-around time can vary. For mouse ES/iPS cells we usually observe teratoma formation in 2 weeks, but for human cells it takes longer. For most cell lines we collect the developed teratoma 6-10 weeks after injection.

**5. What do you provide in your final report?**

When the project is finished, we will send you a detailed report with a list of all identified tissues, a data CD with all original high-quality, publication-grade images, the teratoma tissue blocks and the H&E slides. We also provide fresh or frozen tumor tissues upon customer's request.

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## 6. Why should I do the teratoma formation assay?

The teratoma formation assay is the gold standard to test pluripotency of human embryonic stem (ES) cells or induced pluripotent stem (iPS) cells. Compared to *in vitro* methods such as immunostaining, the teratoma assay is testing for pluripotency *in vivo* and is required by many high-impact journals for the publication of new pluripotent cell lines.

In addition, since it is hard to characterize ES/iPS cell lines from other species, including rat, pig, calf, and sheep *in vitro* with their species-specific pluripotency antigens still in dispute, the teratoma assay is the first choice.

## 7. How do I prepare my cells for the teratoma formation assay?

Feeder cells don't affect the formation of teratoma, so cells cultured either on feeder cells or under feeder-free conditions will work. Monitor the cells carefully and prevent differentiation in the cell culture. Usually we ask for two T75 flasks with 70% confluent cells for human ES/iPS cell lines. When your cells reach 70% confluency, fill the flasks with culture medium and send them to us immediately. For detail, please follow the instruction on our Requisition form. We also offer an additional cell culture service.

## 8. What is the mouse strain background for your teratoma formation service?

Fox Chase SICD-beige, male, 6 week old (Charles River) or NSG, male, 6 week old (Jackson Laboratory)

## 9. If my cells don't form teratomas, do I still need to pay?

Yes, generally you do. For every cell line that we analyze we also inject our control cell line to make sure that lack of teratoma formation is not due to technical issues. But we will definitely work with you and help you to assess why your cell line didn't work.

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