# Growth factors in serum products

HYCLONE SERA

For more than 30 years, we have strived to further define serum components for cell culture applications. In this process, several growth factors in various bovine sera were measured. Table 1 gives descriptions of tested serum products. Results are presented in Table 2 and Figures 1–3.

**Table 1.** Descriptions of tested serum products

| Serum | Description | Product code |
|---|---|---|
| Defined Fetal Bovine Serum, US Origin | Our highest quality fetal bovine serum (FBS) produced from fetal blood and triple filtered through serial 40 nm pore size-rated filters. | SH30070 |
| Charcoal/Dextran Treated Fetal Bovine Serum, US Origin | Defined FBS treated in a proprietary charcoal/dextran process to reduce steroid hormone levels | SH30068 |
| Dialyzed Fetal Bovine Serum, US Origin | Defined FBS dialyzed against normal saline using a $M_r$ 10 000 molecular weight cutoff membrane | SH30079 |
| Iron-Supplemented Bovine Calf Serum, US Origin | High-quality bovine calf serum (BCS) produced from blood collected from formula fed veal animals generally ranging in age from 16 to 22 weeks, and supplemented with iron | SH30072 |
| Cosmic Calf™ Serum, US Origin | High-quality BCS produced from blood collected from formula fed veal animals generally ranging in age from 16 to 22 weeks, and with a proprietary supplementation | SH30087 |
| FetalClone™ I, US Origin | Cost-efficient alternative to FBS produced from specially processed BCS blended with FBS and supplemented with a proprietary formulation of defined components optimized for hybridoma culture | SH30080 |
| FetalClone II, US Origin | Cost-efficient alternative to FBS produced from specially processed BCS blended with FBS and supplemented with a proprietary formulation of defined components optimized for Chinese hamster ovary (CHO) cell culture | SH30066 |
| FetalClone III, US Origin | Cost-efficient alternative to FBS produced from specially processed BCS blended with FBS and supplemented with a proprietary formulation of defined components optimized for fibroblast culture | SH30109 |
| Newborn Bovine Calf Serum, US Origin | High-quality BCS produced from blood collected from animals typically less than 10 days old | SH30118 |
| Donor Adult Bovine Serum, US Origin | High-quality adult bovine serum produced from blood collected from adult donor animals | SH30075 |

**Table 2.** Growth factor levels in various HyClone™ bovine serum products

| Growth factor | Defined FBS | Charcole/ dextran FBS | Dialyzed FBS | Iron-Suppl. BCS | Cosmic Calf Serum | FetalClone I | FetalClone II | FetalClone III | Newborn BCS | Adult Bovine Serum |
|---|---|---|---|---|---|---|---|---|---|---|
| IGF-1 (ng/mL) | 111 | 49.3 | 98.7 | 345.3 | 344 | 194 | 214.3 | 136 | 70 | 212 |
| TGF-beta (ng/mL) | 12.6 | 7.3 | 12.3 | 20.9 | 22.7 | 2.7 | 3.0 | 2.7 | 15.9 | 18.3 |
| FGF-2 (pg/mL) | 37.3 | 32.7 | 43.3 | ND–1.4* | 1.4 | 7.8 | 8.1 | 6.2 | 22.5 | ND |

Results are average from three lots. ND = not detected.
* Two lots were undetectable and one was 1.4 pg/mL.

**Fig 1.** Comparison of average IGF-1 concentration in various HyClone bovine serum products (n = 3). Error bars show +/- one standard deviation.

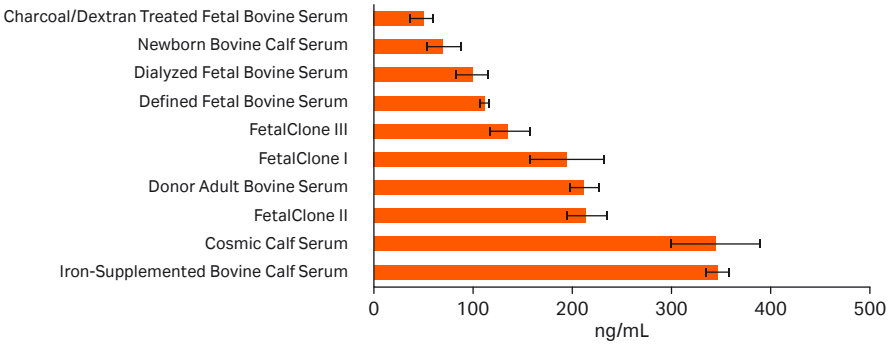



**Fig 2.** Comparison of average TGF-beta concentration in various HyClone bovine serum products (n = 3). Error bars show +/- one standard deviation.

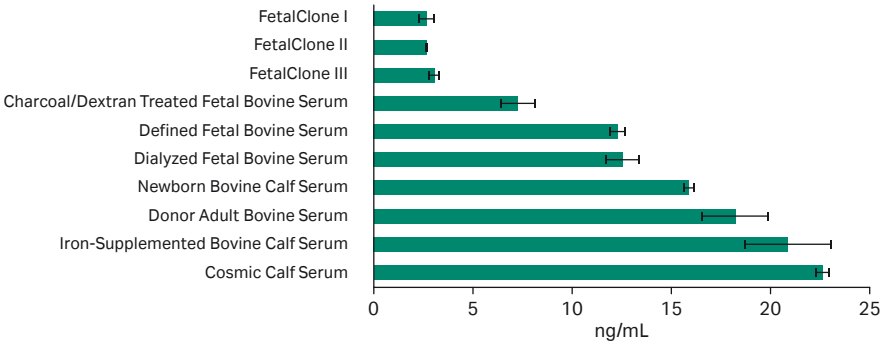
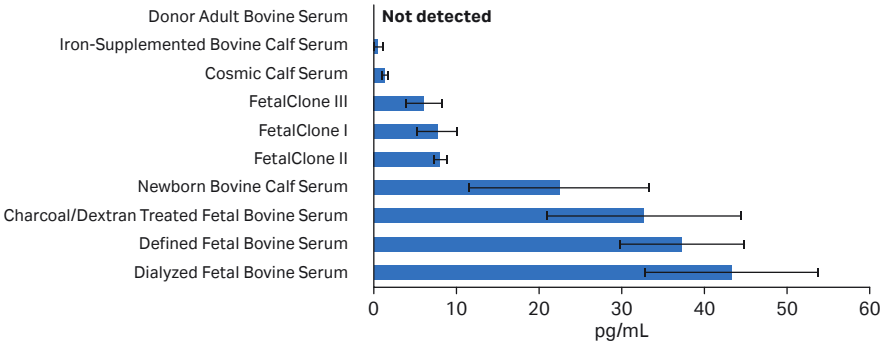



**Fig 3.** Comparison of average FGF-2 concentration in various HyClone bovine serum products (n = 3). Error bars show +/- one standard deviation.




For methodology, more information, and discussion about possible effects on cell culture, please contact Customer Support at 1-800-492-5663.

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