

CCEX 2006, April 23 – 28, Chateau Fairmont Whistler

Viral Dynamics Workshop / M. Carrondo, U. Reichl

Wednesday, 26<sup>th</sup>

## KEY CONCLUSIONS

The value of modelling virus dynamics was considered to relate to the following key components of viral-based cell culture systems:

### 1. Processes

Where the main advantageous usages include

- Characterization of intracellular events
- Sensitivity analysis – improve yields (poor assays)
- Improve infectivity/bioactivity
- Support design of experiments
- In process control & “frame” process development (PAT)
- Define what is theoretically possible
- Adjunct to assay improvement
- Stochastic events – decision on which cells die first (population dynamics model)

### 2. Products

- Improve properties
- Improve/create new products – AAV; gutless
- New host cells
- Immunogenicity (change/hide)

### 3. Return on Investment

- Assays
- Tendency/Trends
- Diagnostic Value

Furthermore, one should be aware of the uncertainty involved with model predictions and forecasts, i.e., models do not make miracles happen. Thus, from this perspective, models for viral dynamics should essentially be used to:

- Diagnose key “nodes” or “pathways” in either type of process or product application;
- Give confidence to decision making under uncertainty

Finally, it was overwhelmingly consensual that assay development in the “viral” area is essential; without better, more precise assays, the power of models in viral dynamics will not substantially move forward.