11.0 PRACTICAL CONSIDERATIONS

11.1 Test Method Transferability

Test method transferability describes the ability of a new method to be accurately and reliably performed by multiple laboratories (ICCVAM, 1997). This definition includes laboratories with experience in the particular type of procedure, and otherwise competent laboratories with little or no experience in the particular procedure. It also addresses whether the necessary facilities, equipment, and trained staff to perform the method can be readily obtained, and whether the cost of the assay and the level of expertise or training needed are considered reasonable. The degree of transferability of a test method affects its interlaboratory reproducibility.

The ICCVAM Submission Guidelines (ICCVAM, 1999) request that an assessment of test method transferability be conducted with respect to the following factors that influence transferability:

- Availability of the facilities and the fixed major equipment needed to perform the test method.
- The training requirements for laboratory personnel to demonstrate proficiency with the test method.
- Costs involved in conducting the test.
- Time needed to conduct the test.

11.1.1 Facilities and Fixed Major Equipment

The facilities needed to conduct *in vitro* AR TA assays are widely available, and the necessary laboratory equipment is readily available from suppliers. To ensure personnel and community safety, facilities should adhere to pertinent State or Federal regulations for the handling of hazardous substances/wastes.

An issue that affects the transferability of many of the assays considered in this BRD is the use of patented technologies. The key patent claims are directed to an isolated or purified human AR protein that is produced by a cell transfected or transformed with a vector comprising certain DNA sequences. The detailed claims of the patent cannot be assessed unless the prosecution history of the patent is analyzed. While this technology is available for use by academic

institutions, government research laboratories, and not-for-profit organizations, it is not readily available to commercial laboratories, which are typically contracted to perform regulatory testing of substances.

The specific needs as related to the various *in vitro* AR TA procedures are essentially the same for all assays. These are described briefly below.

Facilities: Standard cellular or molecular biology laboratory with cell culture capabilities.

Fixed Major Equipment: Luminometer for assays requiring luciferase detection; incubator with temperature, CO_2, and humidity controls; sterile biohazard hoods; and freezer.

11.2 Training Considerations

Assays Using Stably Transfected/Transduced Cell Lines: Currently, mammalian and yeast lines containing both a stably transfected AR and a reporter are not available commercially. A high level of technical expertise would be required to establish such cell lines. However, once established in a laboratory, the cell lines could be readily used in a reporter gene assay that requires staff with basic laboratory skills and training in cell culture techniques.

The other major types of *in vitro* AR TA assays (i.e., those using transiently transfected mammalian cells and the cell proliferation assay) also require staff with basic laboratory skills and training in cell culture techniques. The assays requiring transient transfections would require special training in that technique.

11.3 Cost and Time Considerations

Table 11-1 provides information on the expected time needed to perform a study, special equipment needed, and other considerations. Cost information was not available in the literature; however, it was provided upon request by one commercial laboratory that conducts these assays. It would be expected that the costs for the reporter gene assays using mammalian cells would be roughly equivalent.

Table 11-1 Comparison of Costs, Time, and Special Equipment Needs of Different *In Vitro* AR TA Assays

Assay	Cost/Test Substance	Duration	Special Equipment	Other Considerations
CHO Reporter Gene Assay – Transient	n.a.	3-4 days	Luminescence counter/luminometer for luciferase detection	Patented cDNA and co-transfection technology
CV-1 Reporter Gene Assay – Transient	n.a	3-4 days	Luminescence counter/luminometer for luciferase detection	Patented cDNA and co-transfection technology
HeLa Reporter Gene Assay – Transient	n.a	3-4 days	Luminescence counter/luminometer for luciferase detection	Patented cDNA and co-transfection technology
Hep-G2 Reporter Gene Assay – Transient	$1950	3-4 days	Luminescence counter/luminometer for luciferase detection	Patented cDNA and co-transfection technology
MDA-MB-453-kb2 Reporter Gene Assay	n.a.	3-4 days	Luminescence counter/luminometer for luciferase detection	
PALM Reporter Gene Assay – Stable	n.a	3-4 days	Luminescence counter/luminometer for luciferase detection	
PC-3 Reporter Gene Assay – Transient	n.a	3-4 days	Luminescence counter/luminometer for luciferase detection	Patented cDNA and co-transfection technology
Yeast Reporter Gene Assay – Stable	$1600	2-3 days		

n.a. = Cost estimates not available in the literature or from laboratories conducting the assay.

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