INTRODUCTION

The Endocrine Disruptor Screening Program (EDSP) by issuing testing orders for some of the chemicals on its list to determine whether they may be endocrine disruptors. In the EDSP, Tier 1 testing is performed to assess whether a test chemical is an endocrine disruptor. Tier 1 testing includes the in vivo Toxicity Testing of Domestic Chemicals (TSDC) battery, which consists of a series of assays designed to evaluate potential chemical effects on various endocrine systems. The TSDC battery is designed to provide a broad assessment of potential endocrine disruptor effects, but it is not comprehensive enough to identify all potential effects. Therefore, additional testing, such as in vitro assays or computational modeling, may be needed to fully evaluate the potential endocrine disrupting effects of a chemical.

METHODS

The TSDC battery includes the following assays:

1. Estrogenic Activity
2. Androgenic Activity
3. Antithyroid Activity
4. Antioestrogenic Activity

Each assay is designed to evaluate potential effects on specific endocrine systems, and the results can be used to identify potential endocrine disruptors. The TSDC battery is designed to provide a broad assessment of potential endocrine disruptor effects, but it is not comprehensive enough to identify all potential effects. Therefore, additional testing, such as in vitro assays or computational modeling, may be needed to fully evaluate the potential endocrine disrupting effects of a chemical.

EVIDENCE ANALYSIS

The results of the TSDC battery are evaluated using a tiered approach. In the first tier, the data are evaluated using in vivo assays, and the results are considered to be positive if there is a clear, consistent, and dose-related effect. In the second tier, the data are evaluated using in vitro assays, and the results are considered to be positive if there is a clear, consistent, and dose-related effect. In the third tier, the data are evaluated using computational modeling, and the results are considered to be positive if there is a clear, consistent, and dose-related effect. If the results of the Tier 1 data are positive, the chemical is considered to be an endocrine disruptor, and further testing is recommended. If the results of the Tier 1 data are negative, the chemical is considered to be not an endocrine disruptor, and further testing is not recommended.

RESULTS

The results of the TSDC battery are evaluated using a tiered approach. The results of the Tier 1 data are considered to be positive if there is a clear, consistent, and dose-related effect. The results of the Tier 2 data are considered to be positive if there is a clear, consistent, and dose-related effect. The results of the Tier 3 data are considered to be positive if there is a clear, consistent, and dose-related effect. If the results of the Tier 1 data are positive, the chemical is considered to be an endocrine disruptor, and further testing is recommended. If the results of the Tier 1 data are negative, the chemical is considered to be not an endocrine disruptor, and further testing is not recommended.

DISCUSSION

The results of the TSDC battery are evaluated using a tiered approach. The results of the Tier 1 data are considered to be positive if there is a clear, consistent, and dose-related effect. The results of the Tier 2 data are considered to be positive if there is a clear, consistent, and dose-related effect. The results of the Tier 3 data are considered to be positive if there is a clear, consistent, and dose-related effect. If the results of the Tier 1 data are positive, the chemical is considered to be an endocrine disruptor, and further testing is recommended. If the results of the Tier 1 data are negative, the chemical is considered to be not an endocrine disruptor, and further testing is not recommended.